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ART. I.—*Remarks on Chronic Dysentery; with the History of a Case of Five Years' standing cured within Five Weeks by Topical Treatment.* By T. GAILLARD THOMAS, M. D.

THERE are few curable diseases which offer a more unfavorable prognosis than chronic dysentery. The dangers which attend the affection in its acute stage are greatly increased in that in which painful, hæmorrhagic, and intractable ulcers cover the surface of the rectum and colon, and exhaust the patient by loss of blood, constant pain, frequent evacuations, and the intense nervous depression which attends such cases.

The experienced practitioner will require no citation of authorities to remind him of the determined hold which this disease keeps upon the individual once becoming affected by it; how it baffles all varieties of medical treatment; and how for years it pursues its victim, and in spite of change of air and of all his habits of life it goes on to a fatal issue. So remorseless is its course, and withal so uniform, that it justifies this description at the hands of a modern writer: "Chronic dysentery is one of the most intractable and hopeless of diseases. . . . The duration of the disease embraces usually several months and sometimes years. If not destroyed by some intercurrent affection, the patient becomes extremely emaciated, reduced almost to a skeleton, the surface is usually dry, cool, or cold, the pulse becomes more and more feeble ; the mental faculties are weakened, delirium rarely occurring, but the mind in certain cases falls into an apathetic state, the patient being indifferent to, and taking but little notice of, persons and things around him. Anorexia becomes complete, and vomiting, in some cases, is a prominent symptom ; œdema of the lower limbs sometimes occurs ; ulceration of the cornea is an occasional event, and I have known the cornea to be perforated, with loss of the humors of both eyes ; the mode in which a fatal termination takes place is generally typical of dying by slow asthenia."[1] That this picture is not overdrawn the physicians of this country will testify who have followed out to their terminations the numerous cases which developed in the malarial regions occupied by the soldiers of the United States during the Seminole, the Mexican, and the late Civil wars. Thousands returned, after escaping the dangers of the battle-field, to linger out a painful existence, and to fall victims to chronic dysentery. But the disorder is by no means confined to those who have been exposed to malarious influences ; scarcely a village will be found in our land which cannot furnish examples of it.

The following case is related to show the wonderful results which, sometimes at least, follow local treatment in this intractable disease :

On the 16th of September, 1875, I was sent for to see Mrs. X., who brought me a letter from Dr. J. Goodman, of Louisville, Ky., who stated that she had "suffered from chronic dysentery for four or five years," and that during that time she had had "several attacks of acute inflammation of the bowels, in which she was extremely ill."

The history, as given by the patient, was this : On the 9th of December, 1870, at the moment that she received the unexpected tidings of the death of a brother, she was suddenly seized with acute dysentery. This became chronic, and exhausted her by the severe pain, frequent evacuations, and hæmorrhages which accompanied it. At short intervals acute attacks would be engrafted upon the chronic state, apparently excited by indiscretions in diet or unusual fatigue, and in some of these her conditions became alarming. In her written statement she says: "I have been ill for five years; even when able to sit up and go about the house have had constant dysentery; the smallest number of actions from my bowels being eight, all containing blood, and mucus. It was no rare thing for me to have twenty-seven and more actions from the bowels a day. On these occasions I would lose a large quantity of blood. I lost color, appetite, strength, and spirits, while my nervous system was in a most painful condition. I have been attended by six physicians, and would appear to improve, but soon would drift back to my bad condition. The treatment that gave me more relief than any other (until I came to New York) was some injection used by Dr. Goodman, but I soon grew discouraged, and induced him to discontinue it. I left Louisville, September 12th, in a most desperate condition, Dr. Goodman having sent me to New York."

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[1] Flint's "Practice."

Upon the arrival of Mrs. X. in New York I saw her with Dr. Lewis A. Sayre, who had previously seen her, and, at his and her request, I took charge of the case. Knowing by reputation the practitioners under whose care she had been for five years, I had little hope of accomplishing any good for her by the ordinary methods of treatment, for I felt fully satisfied that all these had been exhausted. My only hope of curing her lay in a resort to local treatment after the method which I now proceed to describe.

On the 19th of September Dr. H. F. Walker anæsthetized the patient and I proceeded to make a thorough examination of the rectum. After etherization she was placed in the left lateral position, and, after stretching of the sphincter ani by the fingers, a long duck-bill speculum was introduced. This was held by my nurse exactly as in vaginal examinations, while by a depressor I pressed downward the anterior rectal wall. No one who has not examined the rectum in this way can imagine the facility with which the whole canal can be seen. In this instance it was perfectly exposed up to the sigmoid flexure. I now cleansed it of all fecal matters by a long glass tube so bent upon itself at its upper extremity as to throw a stream of water from a Davidson's syringe back toward the anus.

Throughout the whole extent of the intestine exposed to view the mucous membrane was seen swollen, œdematous, hanging in hæmorrhoidal masses and studded with deep ulcers with grayish bottoms. It was greatly engorged, and presented that deep red, almost violet, hue which is seen in the throat in cases of diphtheria.

On this occasion no application was made, and, as the anæsthetic had disturbed the patient's stomach and rendered her nervous, nothing more was done until the 30th of September. Then ether being again administered by Dr. Walker and the bowel thoroughly cleansed, I wrapped a small piece of wet cotton around the end of a whalebone rod, and, dipping it in pure commercial nitric acid, lightly touched the swollen mucous membrane and all the ulcers intervening between the sigmoid flexure and the anus. No superfluous fluid was allowed to attach itself to the cotton and the cauterization was nowhere so decidedly practised as to render the occurrence of sloughing possible.

Upon recovery from the anæsthetic a slight amount of pain only was complained of, and writing of the subsequent effect the patient says: "It soothed me and I slept well. This was the first real respite which I had experienced in five years."

At this time the patient was confined to the milk-diet as much as possible and limited as to exercise; but, as both these plans of treatment had been adopted and had failed before she came under my care, I did not deem it wise to press them too much upon her for fear of disheartening her. This application proved of decided benefit in diminishing the number of evacuations, the amount of blood passed, and the degree of pain experienced.

On the 6th of October another application of nitric acid was made. This proved still more beneficial. The patient in her written history declares, "The second application improved me very decidedly." After it the milk-diet was more strictly adhered to, and exercise was more restricted.

On the 11th of October the third and last application was made. Dr. Walker and myself were then both struck by the great improvement in the appearance of the bowel. The ulcers had almost entirely disappeared; the mucous membrane was much less swollen; and the appearance of engorgement much modified. After this application the milk-diet was strictly adhered to, and the patient for ten days confined to bed. The result of this application surprised me. Blood ceased to pass with the evacuations; these in three days became limited to one in twenty-four hours; all pain ceased; and the patient rapidly improved in general appearance, in flesh, and in spirits. "To-day," she writes, "October 26th, I feel that I am entirely relieved, having now for eight days had only one action in every twenty-four hours. All pain has left me. I am gaining flesh, color, appetite, and spirits, and there is not even a trace of dysentery left."

On the 22d of October Mrs. X. left her bed, began to eat small amounts of animal food and bread, rode out every day, and on the 29th of October returned to her home in Kentucky.

Since her arrival there I have received the following letter from Dr. Goodman:

LOUISVILLE, KY., *November* 8, 1875.

DR. T. G. THOMAS—

DEAR DOCTOR: Mrs. X. reached home safely, and I am glad to say has been doing well ever since. She has gained flesh, and is looking better than I have seen her for years. Her bowels are perfectly regular. I have every reason to hope, from present appearances, that she is permanently relieved.

Respectfully yours,

J. GOODMAN.

The patient herself, writing on the 7th of November, says: "We arrived safely, and although we had a most fatiguing journey, being out two nights, I stood it wonderfully well. I must tell you how well I continue to be. My bowels are *entirely* cured, though just now I am nervous (from seeing too much company), and have no appetite. The day after I reached home I saw nineteen lady friends, each one of whom remarked upon the great improvement in my appearance.

Dr. Goodman declares that I look better than I have done for years."

To me this case presents itself as one of great significance. I cannot look upon the result obtained as an accidental one, and I regard it as a case second in interest to none in my experience. Here we have a case of chronic dysentery of five years' standing apparently cured by three applications to the ulcerated rectum; the whole time of treatment being comprised between September 30th and October 29th. Well knowing by abundant experience the nature of the disease of which I speak, even as I write this account I feel inclined to question as to whether I have not unintentionally colored the sketch too highly. The rapidity of the result surprises no one more than myself, but as to the absolute faithfulness of the record here made there is no doubt whatsoever, either in my mind or that of Dr. Walker or Dr. Goodman.

Some may lay great stress upon change of air and strict adherence to the milk-diet. This feeling I cannot share, for I have too often seen these fail in such cases, and they had signally failed in this case when previously tried. There is, I think, no room for doubting that the cure was effected by cauterization of the rectum as above described.

The plan of treatment which I here pursued was not original with myself. It was based upon an article by my friend and former pupil Dr. R. B. Maury, of Memphis, Tenn., published in 1872. In that article several cases were detailed which struck me at the time as being exceedingly important, and suggested to me the course which I have described in this paper. As I cannot lay my hands upon Dr. Maury's essay, I have written to him, and take great pleasure in appending a communication from him upon the subject. In this he explains the theory upon which he believes that cauterization of ulcers within reach aids in the cure of those which are inaccessible.

MEMPHIS, TENN., *October* 23, 1875.

DR. T. G. THOMAS—

MY DEAR DOCTOR: As I have not a copy of my article on "The Treatment of Chronic Dysentery by Topical Medication," which was published in the December number of the *Atlanta Medical Journal*, 1872, I will comply with your request, as far as I can, by giving you the substance of it from memory.

That article related the histories of eight cases of chronic dysentery, which received no other than topical treatment after they came under my care. Seven of these cases recovered.

The remedy used was nitrate of silver, varying in strength from the solid stick, to that of a solution, one drachm to the ounce of water. It was applied through Sims's speculum directly to the ulcerated surfaces, after carefully cleansing the rectum.

The first of these cases was treated in 1869. The method was original with me, so far as I then knew, or have learned since.

Struck with the results obtained from this method, I was soon convinced that an important principle was involved in it.

In these cases the rectum is exceedingly irritable, and responds to the slightest impressions. Through reflex action these impressions keep the whole alimentary canal, but especially the colon, in a state of disturbance; and rest, which is so important in the treatment of all inflammations, is thereby rendered impossible.

The local applications not only exercise an alterative influence upon the ulcers, and thus promote their healing, but, by blunting the sensibility of the inflamed rectum, they restore quiet to the entire intestinal tract.

It was suggested that this treatment should be instituted in every case of dysentery which had continued for six weeks or more, and therefore had ceased to be acute.

Since the article was published, I have treated four or five other cases upon this plan, and with the same results.

Very truly your friend,
R. B. Maury.

In the case of Mrs. X. I preferred using nitric acid to nitrate of silver, for the following reasons: it is a less painful, more effectual, and equally manageable caustic; I have for years used it almost universally by preference; and the pathological condition exposed to view by examination seemed so very grave that I dared not trust to the milder caustic, for fear that the frequent repetition which would be necessary might exhaust the slender stock of patience left to my disheartened and nervous patient.

Of course the idea will at once suggest itself that nitric acid might create subsequent rectal stricture. I had no fear whatever upon this point, for it acts in this way only when applied strongly enough to create sloughing of the superficial tissues and deposit of lymph, the result of inflammatory action in the deeper ones. My use of the caustic was entirely too light for any such result to occur.

Even if this case stood alone, it would seem to point to an important principle in the treatment of a most rebellious class of cases. Supported as it is by the admirable results obtained from the same practice which was here adopted by Dr. Maury, it deserves still more attention. Since it is extremely unlikely that the plan here recommended will do injury to any case of chronic dysentery, and since no other plan offers any decided prospect of relief, it is my sincere hope that others will test the matter, and publish their results, whether they be favorable or the reverse.

Art. II.—*On the Treatment of Amputations by the Open Method.* By Frederic S. Dennis, M. D., House-Surgeon, Bellevue Hospital.

Perhaps one of the most weighty and important subjects to which the surgeon can direct his attention is the proper treatment of amputations in hospital practice. In a careful analysis of nearly five thousand cases of amputations performed in hospitals, reported in Sir James Y. Simpson's works, *one* patient in every *three* perished. When such a frightful mortality as this confronts the surgeon, it becomes indeed a subject of the greatest importance for him to investigate, and, if possible, to find out some method of treatment to lessen the mortality. The plan of construction of our large hospitals is, no doubt, faulty, and has largely contributed to this terrible result; still, this is not the only factor at work, for the after-treatment of an amputation is a matter of the greatest importance. The proper dressing of a stump is as essential to the successful issue as the manner in which the member has been removed. For over a year nearly all the amputations in Bellevue Hospital, in the third surgical division, have been treated by the open method, and the results have been so surprisingly successful, for hospital practice, that it is the object of this paper to describe this dressing, and bring it before the surgical profession as the best and safest treatment for stumps in our large hospitals. This peculiar method of dressing amputations was inaugurated in Bellevue Hospital by Dr. James R. Wood, visiting surgeon to this Hospital, and to him is due all the credit for introducing and carrying into effect this great reform in surgery, which has given such wonderful results on the other side of the water. The frightful mortality that has attended limb-amputations for the past few years in metropolitan hospitals has been such as to intimidate the boldest operator, and stay the hand of the most reckless surgeon. In fourteen consecutive major amputations, performed during Dr. Wood's service within the past year, there has not been a death, although his patients have all occupied the same wards that were vacated a year ago on account of puerperal fever. In addition to these amputations, there have been in these same wards other capital operations, including resections of the knee and elbow joints, and several amputations of the female breast, all of which have done equally as well as the limb-amputations in the continuity and contiguity.

In one case of sub-periosteal resection of elbow-joint, treated openly from the beginning, and in which there was no sloughing, erysipelas, or pyæmia, the temperature only on three occasions rose above 100½° Fahr. In another resection of the knee-joint, only once did the temperature rise to 103° Fahr., and this case was treated in a new apparatus devised by Dr. Fluhrer. In three amputations of the female breast, treated in these same wards, the temperature in each case was below 102° Fahr.

Now to return to the limb-amputations. It certainly speaks well for a peculiar manner of dressing stumps, when the results have been in fourteen consecutive amputations so unprecedented, under circumstances that surgeons would suppose most adverse; and Dr. Wood may well look with profound satisfaction upon this array of successful cases, and feel an honest pride in having revived a method of treating stumps which was unwisely rejected, but which is productive of such excellent results.

The writer will now proceed to describe Dr. Wood's method of dressing stumps in all its details, and refer to the great advantages that this treatment possesses over that of closing the stump, then reply to a few of the most prominent objections raised by surgeons who are opposed to this manner of treating amputations, and finally publish the individual histories of a few cases illustrating the great benefits of leaving a stump open to the air. The cardinal principle involved in this method of dressing is that of preventing suppurative fever, and this object is best attained, as will be shown, by leaving the stump entirely open, thus allowing of free and continuous drainage. After a limb has been amputated, the flaps are not even approximated, but left entirely open. A pillow of oakum is placed under the stump, which is allowed to rest upon this support until the wound is nearly healed. A small piece of gauze is placed over the contour of the stump, and a cradle is placed over the limb, so that the clothes may not come in contact with the painful extremity. This is all the dressing that is employed; no sutures are used except in the lateral skin-flap method, as will be described. No adhesive plaster is employed, no oil-silk is placed over the stump, no bandage is applied, no dry charpie is stuffed into the wound, no fenestrated compresses are placed between the flaps; in other words, the stump is left entirely alone, just as the surgeon made it in his amputation. The wound is thus allowed to drain freely, and the stump is gently washed at frequent intervals by means of an Esmarch's wound-douche. The water in this irrigator is impregnated with crystals of carbolic acid, and, after this ablution, balsam of Peru (which makes a fine stimulating application) is poured over the granulating surface. The discharge which falls from the wound is removed every few hours in order to secure perfect cleanliness; and it is a fact worthy of observation that this discharge will not decompose when exposed to the open air, but that it requires a warm temperature, such as exists in the stump itself, in order to develop putrefaction. The pus, thus coming away from a nidus of putrefaction which would otherwise be formed, falls upon a piece of sheet-lint where the temperature is cooler, and thus does no harm. The stump is then washed at frequent intervals until suppuration has nearly subsided in the wound, and then the flaps are gradually approximated by means of strips of adhesive plaster. Too much importance cannot be attached to this method of operating by the lateral skin-flaps. It affords the best facility for free drainage, and makes the most serviceable stump. It is important to dissect the flaps very long, when they are subjected to the open treatment, as shrinkage often follows exposure to atmospheric influences. This lateral-flap method of amputating Dr. Wood has employed for many years in private practice with uniform success. The line of incision is comparable to a Baron Larrey amputation at the shoulder-joint. Dr. Wood has used this style of flaps on the thigh, leg, arm, and forearm, and has in every case found the stump to be a most satisfactory one. In all the cases reported this style of flap has been cut, with one exception, and mention will be made of this in the history of the particular case. Esmarch's elastic bandage has been employed in every case, and in no instance has sloughing, or any other complication, occurred. The stump after a week is capable of being moulded into any shape, which the surgeon's taste may suggest. During the entire healing of the wound the greatest possible care is exercised in reference to the use of the instruments necessary to perform the dressing of the stump. No sponges are ever used in the wards. Each patient has his own bottle of balsam of Peru, and every instrument used in the dressing of one stump is thoroughly washed in carbolic-acid water before it is employed in the dressing of another. So far as has been practicable, a different set of scissors, dressing-forceps, and other instruments employed in the manipulation of a dressing, has been used, so that each patient had his own instruments, and in this way absolute cleanliness is secured. Each dresser invariably washes his hands in carbolic-acid water after dressing one case before undertaking another, and any one who is dressing unhealthy wounds in the pavilion, or making autopsies, is not allowed to even assist in the daily dressing of healthy wounds. To some this red tape may seem absurd and chimerical; and it is certainly true that one must be thoroughly convinced of the necessity of these measures before he can be induced to conscientiously observe them. Now, the great advantages that are claimed for this method of treatment of stumps, by leaving them entirely open to the air, are:

First. That suppurative fever is very much modified; indeed, it is almost obviated. We know from the most recent researches of surgical pathologists that suppurative fever "is partly due to the blood taking up materials resulting from decomposition of mortified tissue on the substance of the wound, partly to the absorption of material formed by the traumatic or accidental inflammation."[1] If we recognize this generally-accepted theory of secondary fever, we must admit that the severity of the fever must depend upon the nature of the pyogenic material and the special advantages that the absorbents may have in reference, not only to the situation, but also to the extent of the wound. As we have before remarked, if pus is allowed to remain on a granulating surface, with the warm temperature that always exists, this pus will sooner or later decompose, and the products of this decomposition will be absorbed by the wound, and in this way septic material is taken into the system and suppurative fever is developed. If the wound is a large one, and the formation of pus abundant, and the advantages for absorption favorable, it naturally follows that the fever will be one severe in type, and prolonged in character. In leaving the stump open, and allowing the effete material free drainage from the surface of the wound, the most important factor which produces secondary fever is eradicated, the patient escapes the severe constitutional disturbance dependent upon the absorption of decomposed pus from a closed wound, and the discharge, falling below, where there is a cooler temperature, is at once disarmed of its poisonous character.

In the history of every case treated by this open method, the suppurative fever has been almost obviated, notwithstanding the fact that some of the amputations, as is shown by hospital statistics, have been the most fatal in surgery. In all the cases reported, including amputations of the arm, leg, and even thigh, no patient has shown a temperature higher than 103° Fahr., and many of the cases have been, during the entire period of convalescence, with the exception of one or two nights, below 99½° Fahr. This is a most remarkable record, when we include amputations of the thigh high up, within four inches of the hip joint. Now let us compare this record with that of those patients who have been treated by closing up the stump. In all the cases operated upon for amputation, and treated by the closed method, in this hospital within the past year, there can scarcely be found a patient whose temperature was as low as 103° Fahr.; and this statement includes cases of amputation of the forearm and hand, and in some cases even of the fingers, at the time of suppurative fever. In the major amputations the thermometer has shown a record of 104° Fahr., and, in many cases that have been carefully examined, even above 105° Fahr., and in quite a number even as high as 106°. In one primary amputation of the arm in the upper fourth, treated openly, at the maximum intensity of suppurative fever the thermometer introduced into the mouth did not go above 100½° Fahr., a most remarkable circumstance when we take into consideration the fact that this amputation was within a few inches of the shoulder-joint. In another case of primary amputation of the leg within eight inches of the knee-joint, there was scarcely any constitutional disturbance from suppurative fever, and the temperature, except when the patient suffered from a very severe attack of facial neuralgia, did not go above 99½° Fahr. but on two occasions, and then only as high as 100° Fahr. This is a most astonishing case, when we reflect that the amputation was performed and treated in a large metropolitan hospital. In still another case of amputation at the knee-joint, the temperature, with but three exceptions, did not rise above 99½° Fahr. Do not these cases show at a glance that secondary fever is almost entirely avoided by leaving the stump exposed to the air, and thus substantiate the ground taken in reference to the first advantage of the dressings, viz., that suppurative fever is very much modified—indeed, is almost entirely obviated?

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[1] Billroth.

The *second* advantage that is claimed for this peculiar treatment of stumps over other methods that are adopted is, that it prevents all possibility of the formation of abscesses in the vicinity of the stump, which are so apt to form in closed stumps even when they are most carefully watched. In no case that has been subjected to the open treatment has there occurred an abscess, either in the immediate vicinity of the stump, or in any part remote from the wound. The reasons for this are obvious. The conditions that are necessary to develop an abscess are wanting. There is no opportunity for pus to collect within circumscribed limits, there to decompose, and in this way assist, as it must and does, in the formation of an abscess. This is all prevented by a free and constant drainage from the suppurating wound. Now, in a closed stump, more pus is formed than is necessary to meet the indications required, and it is this superfluous amount of pus that is pent up and there decomposes and produces so much mischief, even though the lower angle of the stump is left open for drainage, and it is a very significant fact that, in almost all the cases that have been treated by the closed method in this hospital within the past year, abscesses are recorded in the history-books as a complication during the process of healing of a stump.

Another great advantage that may be claimed in this connection is the absence of erysipelas in the wound, or in the cellular tissue in the vicinity of the stump. It is conceded by many surgeons that sutures in a stump, and strips of adhesive plaster drawn over the flaps, act in many cases as exciting causes to develop erysipelatous inflammation, or at least predispose the integument and cellular tissue to take on this unhealthy action. Whether this is true or not, the fact still remains the same, that in the cases where the flaps are drawn close together, and silver sutures retain them in apposition, erysipelas is very frequently developed, and inflammation is often quickly arrested by removing the plaster, and especially the sutures. In no case has even an erysipelatous blush appeared in a stump treated openly. These two serious complications, the fearful scourges in hospitals, are thus obviated, or at least the tendency to their development is very much diminished. A careful analysis has been made of every amputation performed in this hospital within the past year, and, in almost every case that has been treated by the closed method, either abscess, erysipelas, or sloughing, has been a complication, or else the suppurative fever has been of the most severe type. Now, on the other hand, in all the cases treated by the open method not one of these serious complications has occurred.

Last March two cases were admitted to Bellevue Hospital, both of which required primary amputation. They were sent to Ward 16, where the hygienic conditions which surrounded them were precisely the same. Both men were under the influence of liquor at the time of their admission, and both were addicted to the habit of drinking. They were about the same age, and as far as can be judged were in about the same constitutional condition. As the circumstances are unique, the writer will avail himself of this most remarkable coincidence to illustrate, in a practicable manner, the difference in the treatment of stumps, one by closing the wound, the other by leaving it open. Let us first dwell upon the case that was treated by the closed method. This patient, upon whom an amputation was performed, and whose stump was closed after the operation, was suffering from a compound fracture and dislocation of the ankle-joint, which could not be reduced, although tenotomy has been performed upon the tendo Achillis. A consultation was held, and the surgeons decided that amputation afforded the patient the best chance for his life. Accordingly, an anæsthetic was administered, an Esmarch elastic bandage was applied, and the amputation was performed by the lateral skin-flap method. Soon after the amputation had been performed, the flaps were approximated and brought into beautiful apposition by silver sutures, strips of adhesive plaster were applied to relieve tension in the edges of the flaps, a bandage was neatly put over the stump, and the patient rallied nicely from the shock of the operation. During the evening an anodyne was administered and the patient passed a very comfortable night. The afternoon following the operation Dr. Wood made his usual daily visit to the hospital, and, upon examining the condition of this patient, requested the house-surgeon to remove the dressings from the stump. The flaps were found to be slightly red and œdematous. Dr. Wood ordered several sutures to be removed, that better drainage might be secured. The temperature of the patient was about 101° Fahr., and he appeared restless and anxious. The next day the erysipelatous blush was well pronounced, and the condition of the stump was not healthy. Several days later there was detected a slight swelling near the crest of the tibia, four inches above the end of the stump, which upon examination was found to have all the characteristics of an acute abscess. An incision gave exit to about two ounces of unhealthy pus. This relieved the patient, and his condition now was a little better. The sutures were still retained in the stump, a few having been removed at different times in order to still better facilitate drainage from the lower angle of the wound. Lotio plumbi et opii was applied externally for several days, and quinine-and-iron was administered in moderate doses. Several days later this patient had a well-pronounced chill. There were signs now of serious constitutional disturbance. His face was flushed, he complained of sickness at the stomach, his pulse was full and strong, his countenance was anxious, and the general aspect of the patient indicated some grave disturbance. His temperature rose to 106½° Fahr., and his respirations were hurried. Quinine was given in twenty-grain doses every three hours during the night, together with stimulants. He was sponged off thoroughly several times during the night with alcohol, and the next morning his temperature was reduced to 100½° Fahr. He passed a bad day, and the prognosis was exceedingly grave. He suffered from delirium, anorexia, and carphologia. His evening temperature was 105° Fahr., and the quinine was continued in large doses, in addition to stimulants and the sponge-bath. Another abscess formed in the vicinity of the stump, which was promptly opened, and gave vent to a considerable amount of pus. His condition at length improved, and he was finally discharged cured.

Let us now refer to the other case, and see what lesson this patient teaches us in reference to treating wounds openly in our large city hospitals. This man was brought to the hospital under the circumstances already mentioned. Upon examination of his injuries, the foot of the right leg was found to be crushed in a most frightful manner. The bones of the metatarsus were fractured and comminuted, and there was great loss of substance in the soft parts. A consultation was held at the same time as in the case of the other man, and by the same surgeons. The leg was condemned by a unanimous vote, and primary amputation was advised immediately. The operation of election in this case was the circular flap with two vertical lateral incisions, which facilitated turning back the integument and adipose tissue. The patient, after the completion of the operation, was placed in a comfortable bed, opposite to the other man in the same ward. He rallied nicely from the operation, and this case was treated from the beginning in precisely the same manner as has been described. It is wholly unnecessary to give the daily record of pulse, respiration, and temperature, in this case; but it will suffice to add that, exclusive of the natural elevation of temperature during the period of suppurative fever, his record was between 98½° Fahr. and 99½° Fahr. during the entire period of his recovery from an amputation, primary in character, of the leg. His highest temperature was 103° Fahr., which occurred only one evening, and on another evening his temperature was 101½° Fahr. Now, both of these temperatures occurred at the height of suppurative fever, and if we reflect upon the fact that this is not a high temperature for one suffering from secondary fever, and that this elevation only extended over a few hours, is it not remarkable that his record was almost a normal one during a convalescence from a primary amputation of the leg, performed in a large metropolitan hospital? No abscesses formed in the vicinity of the stump, the flaps had not the slightest erysipelatous flush at any time, there was no sloughing of the part, he had no chill, and scarcely any constitutional disturbance. He was ordered to remain in bed a much longer time than was necessary, as his rapid recovery without a bad symptom was discouraging to his companion on the opposite side of the ward.

There is presented in these two cases, *similar* in respect to surroundings, injuries, age, constitution, habits, and operation, but entirely *different* in reference to the treatment of their wounds after amputation, a contrast that is at once striking, as it is unique. It was a rare opportunity to illustrate in a most practicable manner the advantages of one method of treating stumps after amputation over another. If any exception can be made in reference to the cases selected, nevertheless, the great principle which is involved in treating stumps openly is fully vindicated in the respective histories of these two men. They were brought to the hospital the same afternoon, they were assigned to the same ward, they were operated upon at the same hour, they were treated by the same surgeon, they were subjected to precisely the same amputation, they were surrounded by the same hygienic conditions, they were both hard drinkers and intoxicated at the time, facts which have an important bearing in estimating the results of a severe surgical operation. A careful analysis of the cases in this hospital shows the highest temperature reached in suppurative fever by those whose stumps were treated openly to be about equal to the very lowest temperature during fever in any of the cases in which the stumps have been closed. The average temperature at the height of suppurative fever of those cases treated by the closed method is nearly 104° Fahr., and, in every case, abscess, sloughing, erysipelas, or pyæmia, has intervened, and in a very great many even death. Do not these facts point to something significant in the dressing of a stump? are they not calculated to arrest the attention of every thinking and honest surgeon? and will they not throw some light upon the dark subject of the fatality of hospital amputations?

In the cases that are now to be reported, no selection has been made that would include the best; but every amputation on the third surgical division is given in chronological order, from the time at which the two amputations above described were performed. It is obvious that a limit must be made, and the writer has selected this period from which to report every case in its order. In the amputations that occurred before this date, some were treated openly with the most satisfactory results, others were treated by the closed method. A sufficient number of cases will now be reported to illustrate practically the many advantages that have been claimed in this paper for this method of dressing stumps; also to prove that the objections that are raised against this plan of treatment are unfounded, and to show that they will not bear the crucial test of experience.

Before giving the histories of the cases treated by the open method, it may be well at this point to reply to a few of the most prominent objections raised by those who are opposed to this plan of dressing.

1. It is strenuously urged by those who advocate closing the wound, and particularly those who adopt the *Maisonneuve* or pneumatic occlusion method, that the atmospheric influences exert a baneful effect upon the open wound. This opinion, which has been entertained for some years by eminent surgeons, has been proved by experience to be incorrect. On the contrary, certain varieties of wounds do best when they are exposed to atmospheric influences. Billroth says, in the latest edition of his work on "Surgical Pathology," that "free air does no harm to the wound; imprisoned air is very dangerous." He further adds that a wound treated openly from the start has no bad smell, unless large shreds upon it become gangrenous. "The idea that air was injurious to a wound," says this learned pathologist, "rests chiefly upon the observation that the entrance of air to abscess cavities with rigid walls, and into serous sacs, usually induces suppuration." He states also that "we must attribute much blame to the fact that in the pus-sacs the air is warmed, and impregnated with watery vapor from the pus; this inclosed air now becomes a true hatching-place for those minute organisms which cause decomposition, and which are always more or less present in the atmosphere." No such reasoning is, of course, applicable in the case where the flaps are left open to the air, for the air here is not pent up in a cavity, and the temperature is the same as the surrounding medium. That the products of putrefaction are irritating and poisonous to a wound, all will readily concede; but, in a stump which is suppurating, there is a granulating surface in itself constituting a protecting layer, which resents the absorption of the poison. If a stump is closed, and air is not permitted to gain access to the wound, the discharge which collects remains pent up, and this forms a nidus for putrefaction; but, if left open, the effete material is carried off by the free and constant drainage.

Pasteur first demonstrated that oxygen was not the cause of putrefactive suppuration, but that it was a species of fermentation produced by microscopic organisms which float in the air. As soon as it was understood that this change was due to fermentation, at once it was clearly seen by surgeons that any agent that would destroy the vitality of these little atmospheric organisms, without injuring the tissues themselves, would permit of wounds being treated openly. Now, we know by experience that in carbolic acid we have one of the most potent remedies in overcoming this objection, for this acid will completely destroy the septic energies of any of these low forms of life. In accordance with this view, the wounds were left open to the air, for any deleterious effects arising from atmospheric influences could at once be obviated by this powerful remedy. It was for this reason that the stumps treated by the open method have done so surprisingly well, and those that have been closed have done so badly. In addition to the destruction of these germ-poisons by carbolic acid, we know that this application has an anæsthetic effect upon the tissues with which it comes in contact, and not an irritating influence, as some surgeons have been prone to think.

2. It is objected that, if a suppurating wound is left open, there will be formed a bed for flies and other insects to deposit their eggs, and thus a long train of evil consequences would follow. Now, if it were true that flies by depositing their eggs could produce certain low forms of life on a granulating surface, this one circumstance alone would justify a surgeon in completely abandoning such a dressing; but, happily, experience and close observation have proved to us the absurdity of this objection. It is a fact well known among surgeons that flies and other insects are apt to creep into dressings and deposit their eggs; but it is a fact just as well known among careful observers, that flies will not deposit their eggs upon a healthy granulating surface. So, whatever may be the reason for this singular circumstance, the fact remains a true clinical one, and shows that flies, even in warm weather, do not render the treatment of stumps by the open method impossible.

3. It is objected that flaps thus exposed to the air have a tendency to slough. There is no reason why they should slough, and many reasons can be assigned to show why they

should not. By reference to notes taken at the time of the individual cases to be reported, it appears that in not a single case did sloughing of the whole or part of the flaps occur. In carefully examining the cases that have been treated by the closed method, it is surprising to find how few recovered without sloughing of part of the flaps, and in a few cases the entire flaps are reported to have sloughed. The risk of secondary hæmorrhage is mentioned by some as an argument against this dressing. In no case has it occurred, although the ligatures have come away as early as the fifth day. In one case there was an intermediary hæmorrhage; but this was immediately observed and arrested, without the trouble of taking out the sutures and searching for a bleeding point. Mention will be made of this in one of the cases to be reported.

Case II. Service of Dr. James R. Wood. *Compound Comminuted Fracture of Radius and Ulna, involving Elbow-Joint.*—J. G., aged twenty-eight, married, liquor-dealer, was admitted to Bellevue Hospital, March 29, 1875. The family history is of no special importance. Patient gives a history of venereal disease, and states that for the last few years he has been a hard drinker. On the night of his admission to the hospital he was riding upon the front platform of a street-car, and fell off, the wheels passing over his arm. Upon examination, there was found a compound comminuted fracture of the forearm, involving the elbow-joint, and extending upward above the condyles. There was also great laceration of the soft parts above the elbow-joint, with considerable loss of substance over the anterior aspect of the arm. Dr. Wood saw the case, and amputation was performed the same evening, the arm being removed a few inches below the shoulder-joint. The stump was left open, and the edges of the flaps were not even approximated by strips of adhesive plaster. He passed a very good night, and reacted nicely from the shock of the operation. The wound was dressed from the beginning in precisely the same manner as has been described in this paper. The daily temperature in this case will not be reported, and it will suffice to state that, for twelve days after the operation, his temperature was below 100° Fahr., with the exception of three evenings, during which time he was suffering from suppurative fever. At the maximum intensity of fever his temperature only rose to the low point of 100½° Fahr., which is a remarkable temperature for a patient who is at the highest point of suppurative fever, following an amputation of the arm within a very few inches of the shoulder-joint. This patient made a rapid and successful recovery, and left the hospital at an early date.

Case III. Service of Dr. J. R. Wood.—L. D., aged twenty-five, admitted September 17, 1875. This patient was sent by a French naval surgeon from the man-of-war Minerva, to have his left thigh amputated. He was a sailor in the active discharge of duty, and was injured by the anchor-chain. At the time of his admission he was suffering greatly from shock, consequent upon his injuries and loss of blood. Upon a thorough examination of the case, there was found a compound comminuted fracture of the femur, involving the knee-joint. The leg and foot of the same side were cold and cyanotic. The finger introduced into the wound on the inner aspect of the thigh came in immediate contact with the articulating cartilages of the knee-joint. The soft tissues of the leg were contused, but no bones were broken. After a consultation was held, it was decided to operate at once, as this gave the man the best chance for his life. The vessels having been secured, the stump was left resting on a pillow of oakum, with the flaps open. No sutures were employed, no adhesive plaster was applied, but the stump was left open, exposed to the air in exactly the same manner that has already been described in this paper. The patient did not react well after this severe operation, and remained in a precarious condition for many hours. Every thing was done to resuscitate the man. He was in a state of collapse; a hot-air bath was administered; his extremities were thoroughly rubbed with tincture of capsicum, sinapisms were applied over the epigastrium, and cloths wrung in hot water and alcohol were placed over his abdomen. Brandy was given freely hypodermically every few minutes for the first hour after the operation. After a number of hours he began to react, and at two o'clock on the following afternoon he had rallied from the shock of the amputation. On the evening after the operation, unusually severe, owing to the peculiar character of the accident, the great delay in the operation, the necessity of transporting him from the French man-of-war in the bay to the hospital, and the shock which attended the injury, his temperature was 98½° Fahr., his pulse 130, and his respirations 30 to the minute. Notwithstanding traumatic fever following so severe an accident, and suppurative fever after so grave an operation, his temperature rose to 103° Fahr. but once during the entire period of his recovery, and this was his zenith temperature at the height of suppurative fever in a primary amputation of the thigh high up, within five inches of Poupart's ligament. On the twelfth day after the operation his temperature was 98½° Fahr., having been below 100° for several days previous to this date. Four evenings following, it rose above 100° Fahr., but the ten days after it ranged between 99° Fahr. and 100° Fahr. The ligatures came away in due season, the flaps after a week from the operation were gradually brought into apposition by means of strips of adhesive plaster, and the stump healed in a most beautiful manner. The patient was out of bed at an early date, and has been presented with an artificial limb which was given to him by his fellow-countrymen residing in this city, through the kind efforts of Dr. Allen, house-physician in Bellevue Hospital.

CASE IV. Service of Dr. James R. Wood.—R. W., aged forty-six, widow; domestic. Admitted to Ward 13, September 15, 1875. This patient came to Bellevue as a private patient of Dr. Wood. Nearly one year ago she was run over by a street-car, and received a compound comminuted fracture of the fibula with dislocation of the ankle-joint. The lower end of the tibia was resected, and she remained in a very precarious condition for many weeks. Her leg had many sinuses, which after a while closed, leaving the limb in a bad condition. In addition to the fracture of the fibula just above the external malleolus, there was another fracture of the bone a few inches below the styloid process of the fibula. The lower fracture was compound, but the upper one was simple. She recovered from these injuries with a useless organ of locomotion; the limb was fully three inches shorter than the one on the opposite side, the foot was falsely anchylosed in the extended position, and the fibrous tissue intervening between the lower end of the tibia and the astragalus gave rise to a severe attack of erysipelas upon the slightest motion. She was unable after eight months to bear any appreciable weight upon the foot, and there was necrosis of the bones of the tarsus. After a consultation of surgeons it was decided to remove the useless limb, and thus afford her a good stump for an artificial limb. At her request the operation was performed, and was made at the knee-joint, the lowest point of election, owing to the condition of her leg after her injuries. The patella was left, as it was not diseased, and it filled up the trochlear space, thus beautifully preserving the contour of the stump. The external flap was made a little longer than the internal, to counterbalance the difference between the two condyles of the femur. The flaps were left entirely open, with the exception of two sutures at the beginning of the vertical incision, so as to cover over the end of the femur, and attain primary union for two or three inches, and thus have a linear cicatrix over a part of the anterior aspect of the stump. These long skin-flaps were allowed to rest upon a pillow of oakum, and free drainage was thus secured. In the report of the case, the record of the daily temperature and the condition of the stump will be omitted for obvious reasons, and a short *résumé* will be given which will enable one at a glance to comprehend the progress of the case up to the time of complete recovery. The highest temperature that this patient had during her convalescence was 102¾° Fahr., and this was at the maximum intensity of suppurative fever. From this time for twelve days following, her temperature rose but on two occasions above 99½° Fahr. She had no marked constitutional disturbance, no abscesses, no erysipelas, but made a most rapid and satisfactory recovery. On the twentieth day after the amputation she was out of bed, and she has now entirely recovered from the operation.

Case V. Service of Dr. James R. Wood.—A. M., aged thirty-four. Admitted October 16, 1875. This patient was brought to the hospital by the ambulance. Family history is uncertain, and his personal history is good as regards his general health. He acknowledges that he has had venereal disease, and also states that he has been a drinker for a number of years. Patient says that two hours before his admission he fell from a shed on to the pavement, a distance of sixteen feet, and that he struck with the whole weight of his body on his right leg. Upon admission, the patient was found to be a strong, healthy man. He was not suffering from shock, although there had been considerable hæmorrhage from the open wound. Upon examination, there was found a compound comminuted fracture of the tibia and fibula, about six inches above the ankle-joint. The finger of the surgeon introduced into the wound could be swept around for some distance subcutaneously, and sharp spicules of bone could be felt. The calf of the leg was very much infiltrated with blood, and, from the alarming hæmorrhage which occurred upon removing the compresses, it was supposed that the anterior tibial artery was ruptured. At one o'clock the same day, a consultation was held, and the result was a decision in favor of primary amputation. The incision was begun about eight inches below the knee-joint. The man rallied nicely from the shock of the amputation, and the flaps were left open as described. Two silver sutures were introduced at the beginning of the incision in order to cover over the medullary canal. The stump was treated essentially the same as the other cases. If exception is made to a rise of temperature that took place one night during a severe attack of facial neuralgia, which occurred also at the height of the secondary fever, this case gives the astonishing record of a temperature scarcely above $99\frac{1}{2}°$ Fahr. during the entire period of his recovery. The ligatures came away early, the stump has healed nicely, and the man has made a most speedy recovery. There is presented in this case a primary amputation, following an injury which produced a compound comminuted fracture, with a record as excellent as it is rare. When records show that the statistics of this operation in hospital practice give a fatality of one in every two and a half, this report certainly speaks well for this method of dressing the stump. The patient is now entirely recovered, and did not have a bad symptom.

Case VI. Service of Dr. James R. Wood.—T. M., aged twelve. Admitted November 12, 1875. This boy states that he has enjoyed the best of health all his life. Seven hours before his admission, while patient was playing, he attempted to jump on a train of cars belonging to the Hudson River Railroad Company, and he slipped, the wheels passing over his foot, crushing it in a most frightful manner. Upon examination, the following injuries were found: The integument was stripped off from the entire dorsal surface of the left foot, the ankle-joint was opened, and there was a compound dislocation of the cuboid and external cuneiform bones at the tarso-metatarsal articulation, and the phalanges were extensively comminuted. Dr. Wood, after examining the foot, decided that amputation afforded the boy the best chance for his life. The leg was removed six inches above the ankle-joint by the lateral skin-flap method, and one or two silver sutures were introduced at the upper angle of the incision for the reasons already assigned.

A flap of periosteum was enucleated from the shaft of the tibia, in order to cover over the medullary canal, a procedure that Dr. Wood has adopted for many years. The spine of the tibia was removed by a pair of gnawing bone-forceps, to prevent the crest of the tibia from ulcerating through the integument over the anterior aspect of the stump. The patient was placed in bed immediately after the operation, the vessels having been secured by the ligature. At one o'clock in the morning the house-surgeon was hastily summoned by an attendant in the ward, who announced that the patient was bleeding. The femoral artery was compressed, and upon arrival of the house-surgeon there was found a large clot of blood upon the oakum. A careful examination was made of the stump, which was easily done, as every thing was exposed to view, and this examination failed to detect any bleeding point. The compression of the femoral artery was discontinued, and no further trouble was experienced.

There was no further trouble during the night, and the patient rested well. Space will not permit of a daily note of the progress of this little boy; it is, however, worthy of mention that, on the sixth day after this severe operation, he sat up in bed, and appeared cheerful and happy. On the seventh day every ligature came away without any force, and the flaps were now brought into apposition, and a beautiful stump was moulded from day to-day.

CASE VII. Service of Dr. James R. Wood.—M. Q., aged twenty. Admitted December 1, 1875, 5.45 P. M. This patient was injured by machinery. Upon examination, there were found severe burns of the first and second degree upon her arms and left leg, a severe sprain of the shoulder-joint, and a compound fracture of the right tibia with extensive laceration of the soft parts. The tibia was denuded of its periosteum for a considerable distance, and the tendons of the tibialis anticus, peroneus tertius, and extensors, were hanging from the open wound. Dr. Wood carefully examined the case, condemned the leg, and amputation was performed at once. The incision was begun just below the insertion of the quadriceps extensor. The patient rallied nicely from the operation and made a most satisfactory recovery. Notwithstanding the fact that she was suffering from peripheral irritation due to burns and from a severe attack of dysmenorrhœa, at the maximum of suppurative fever, the thermometer did not rise higher than 102° Fahr. She sat up in bed on the sixth day after the operation, and her temperature was 98½° for three following mornings.

ART. III.—*The New Sphygmograph; or, Instrument adapted as a Sphygmograph, Sphygmometer, Cardiograph, Cardiometer, and to Other Uses.* By A. T. KEYT, M. D., Cincinnati, Ohio.

MAREY'S sphygmograph, with its subsequent improved modifications, is a very fair instrument. When all is favorable—the subject patient and quiet, and the physician skillful in its use; the spring placed accurately upon the artery at just the right pressure and retained there by the proper adjustment of the pad and elastic straps; the point of the tracer by few or many turns of the screw brought into right relative position with the slide, and, all made ready, the clock-work set going—the representation it gives of the radial pulse is admirable. But such conjunction of favoring circumstances is by no means frequent, and, even when met with, the result is obtained at the cost of more pains and time than the majority of physicians can, or are willing to, devote to the object. Neither can this instrument be well placed on any but the radial artery, nor can tracings be taken by it of very young children, or very weak patients. Besides, its provision for estimating the compressibility of the pulse is crude and very defective. Thus many and serious obstacles are in the way of its successful employment, and it must be admitted that Marey's sphygmograph is not growing in favor with the profession.

With the sphygmograph of Dr. Holden, our countryman, I am acquainted only through his prize essay. It differs from Marey's in the form of pulse-spring—a feature of which is a concavity intended partially to surround the artery—in communicating a side-to-side instead of vertical motion to the writing lever, in a watch-spring device for registering the pressure upon the artery, and in being unprovided with a retaining apparatus. The tracings by this instrument, as published, certainly do not commend it. In a comparative estimate, I conceive that Holden's possesses no advantages over Marey's, and in point of fidelity of delineation is far inferior to it.

After familiarity and experience with the one, and consideration and study of the other, I became impressed that, in order to reap the full advantages of written pulsations, our great need was, still, a sphygmograph combining convenience, adaptability, facility, and variety of use, with delicacy, precision, and truthfulness of delineation ; and withal a simple and correct index of the pressure at which the tracings were taken. This path of invention so invitingly opened up to me, I entered, and I now desire to communicate the main results, so far, of my special work.

THE PRINCIPLE.

The new sphygmograph is constructed upon the principle of utilizing elastic membrane and a liquid, as water or alcohol, to receive and transmit to the tracing-lever the movements of the pulsating artery, in place of the steel spring and rigid bar used for the purpose in the instruments already before the profession.

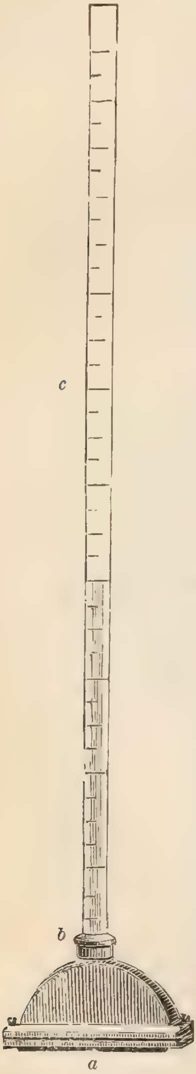


FIG. 1.—THE SPHYGMOMETER.

Elastic membrane and such liquids are so closely allied in physical properties to the arterial coats and the blood as to constitute them very natural media for the purpose indicated. The one, in its trueness and delicacy of response to distending force, and certainty of instant return to its former state when the force is removed, is exquisitely adapted to receive the impressions of arterial movements; and the latter, in its lightness and practical incompressibility, with its quick facility of movement in the direction of least resistance, is no less nicely adapted to receive and transmit these impressions.

To facilitate our present illustration we here introduce the instrument represented in Fig. 1, which we name the sphygmometer, and whose uses we shall more fully describe on a later page.

The base or receptacle, *a*, is made of thin brass; it is semicircular in form, with an oblong free edge below, and a shallow neck, *b*, above, into which is inserted, air-tight, the glass tube *c*. The free edge of the base measures inside one inch and three-eighths in length by three-eighths in width; and over it is drawn, by means of a special device, presently to be described, a rubber membrane, air-tight, and just tense enough to secure its smoothness and integrity of action. The glass tube is eight or ten inches long, of small bore, and graduated in inches, halves, and quarters. If the base be now filled with water to the top of the neck, the instrument is ready for our purpose.

If, first, we properly press the base directly over an artery, as the radial, the elastic floor expands, closes round, and accurately fits the vessel as the segment of a sheath, the liquid in the mean time rising in the tube in proportion to the expansion upward of the basic membrane. The elastic coat so embracing the artery will move exactly with its movements, rise and expand with its diastole, fall and contract with its systole, and be impressed by all its minor changes. There is a degree of pressure at which the tension of the membrane so counterpoises the tension of the artery as best to develop these movements. We will suppose the particular point attained, the liquid column measuring a corresponding height. The superimposed liquid, pressing the basic membrane at all points, reserves and instantly conveys the motions so impressed upon the latter, to the column in the tube, where they reappear as distinct undulations. These undulations are true and exact pulsations of the artery, transferred to the liquid in the tube.

If, second, while all is *in situ*, and the liquid in the tube oscillating, say from four to four and a half degrees, we suppose the tube shortened and the end expanded into a small shallow cup, just at the height where the undulations, now greatly reduced by the increased area occupied by the liquid

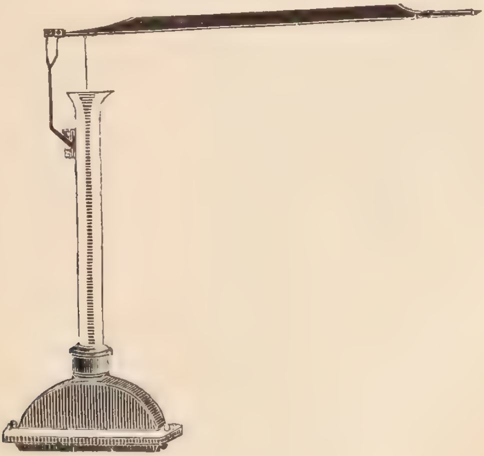


Fig. 2.

will rise a little above and fall a little below the level of the rim, and suppose fixed over the top a thin, elastic membrane, air-tight, the pulsations that were seen in the liquid will now be manifest in the disk, which will be seen to rise and fall in exact obedience therewith.

If, third, a pin be placed with its thin, flattened base fixed to the centre of the disk, and its point impinging against the under side of a light lever moving on a delicate attachment, the motions may be amplified to the required extent, and the point of the lever will represent, just as the column in the tube, the movements of the artery (*see* Fig. 2).

The Construction.—The principle established as true and effective, it remained to adapt mechanical contrivance, so as best to develop and carry out the principle. After much study and experimentation I have settled upon the basis of the following plan, embodied in the simple instrument shown in the cuts Figs. 3 and 4, which I proceed to describe and explain:

The central receptacle or base, *A*, is essentially of the form and dimensions as represented in Fig. 1. In order to secure the basic membrane at the lowest level, air-tight, and uniform in its tension, and withal an easy way of placing and replacing the same, the base is made in two parts (*see* Fig. 5). We place the rubber cloth, of selected quality, lying flat and natural, upon the lower flange; then pass the upper regularly into the lower part, the membrane gliding and stretching over the advancing edge, until all is brought in contact, and then made tight by screws, one at each end. Between the two parts the adaptation is such that, as the flanges are approximated, the membrane closes the chamber air-tight before these are in close apposition, an arrangement by which we are enabled to regulate the tension of the membrane in accordance with a rule to be presently stated.

The chamber opens above into a short tube, which is made continuous by a screw-joint with the vertical limb of a three-way stopcock, *B*. Extending from the horizontal limbs are two small brass tubes, *C*, *C*, one on each side, in all respects symmetrical with each other, and formed as seen in the figure. Fixed to the curved extremity of each tube, at the same

FIG. 3 represents the instrument in the act of taking the radial pulse: *A*, the base; *B*, the 3-way stopcock; *C*, *C*, the lateral tubes; *D*, *D*, the hinges; *E*, the graduated tube erect and the liquid standing at 4—the same seen empty and turned down in Fig. 4; *F*, the distal leaf that closes the opening when the tube is down; *G*, the contrivance for fixing the small disk; *H*, the pin with its base in the disk, and point in the socket *I*; *J*, the arm which supports the lever and its mechanism; *K*, the writing-lever; *L*, the clock-work; *M*, the smoked-glass slide on the carriage, showing the first part of tracing; *N*, the reservoir, shown entire in Fig. 4

FIG. 3

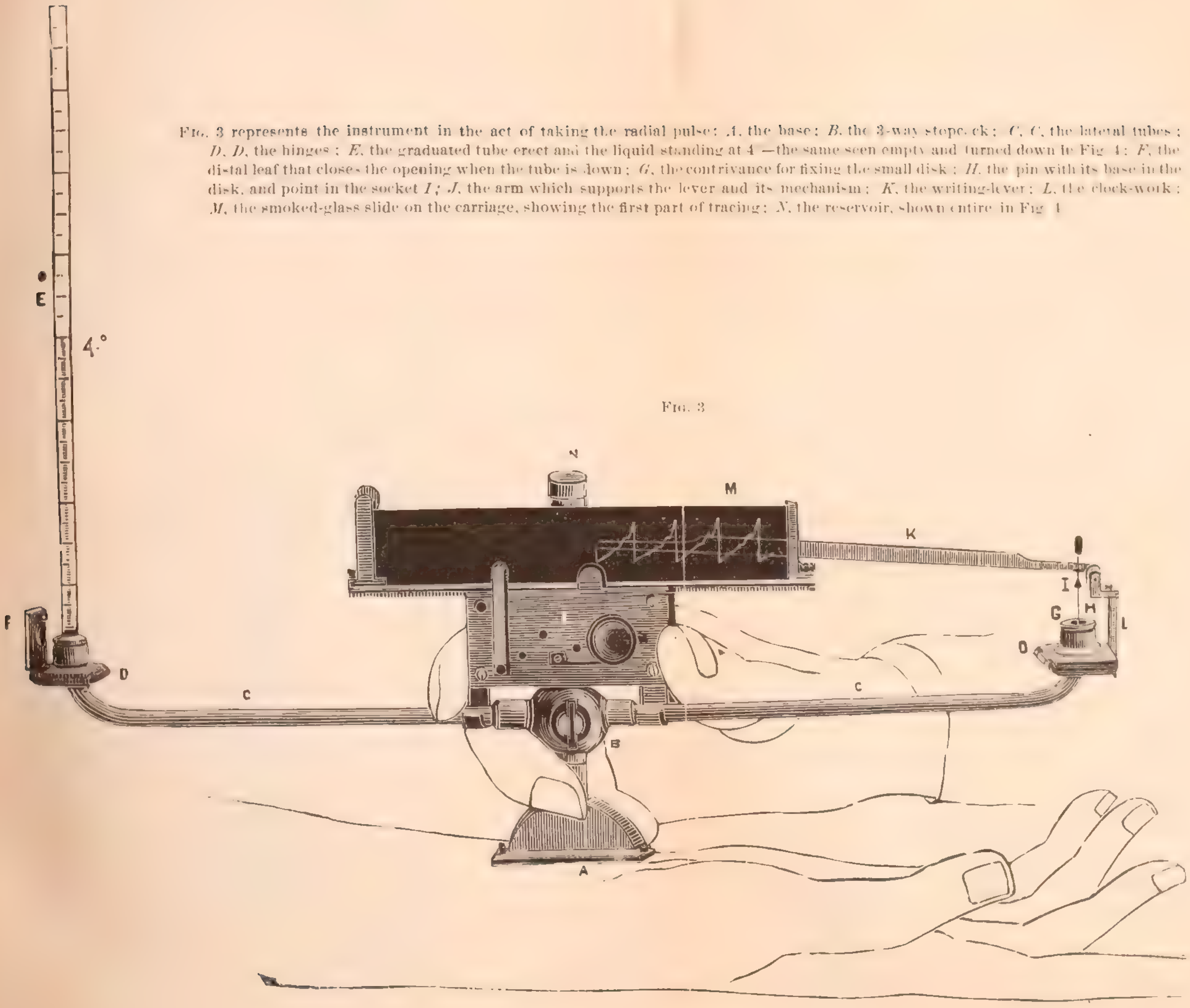


FIG. 4.

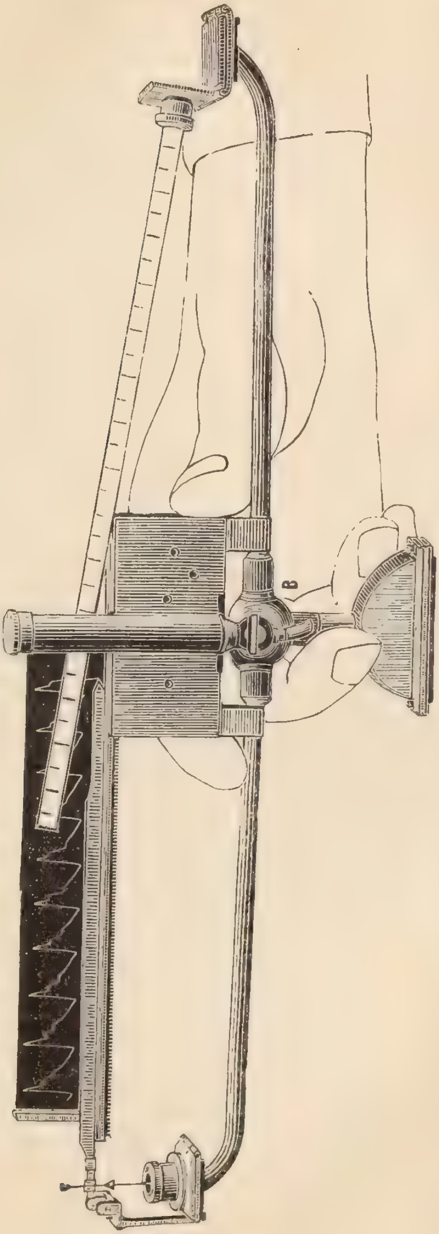


FIG. 4 shows the instrument raised from the arm with its other face to view, the sphygmogram complete, the tracer fallen, the tube empty and down, the digital leaf closing the opening, and all as when ready to lay aside or place in its box.

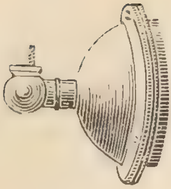


FIG. 6.

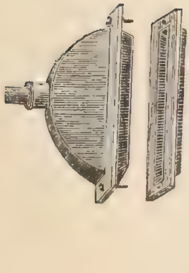


FIG. 5.

level, is a smooth, well-finished hinge, *D*, *D*. Each tube opens up through the lower attached leaf of its respective hinge, by a small cup one-quarter of an inch in diameter. Directly over one lateral cup, the near leaf of the hinge is perforated by a small opening, which communicates with the graduated glass tube, *E*. The arrangement by which the glass tube is kept securely in place is by a shallow brass tube with a screw cup attached to the upper lid, with its centre over the opening; the glass tube, surrounded by a short section of rubber tubing, being introduced, the cup is screwed down and all made tight and firm. The distal leaf *F*, provided with a rubber disk, is for the purpose of closing the cup when the tube is lying down and the instrument not in use. Placed level, without arching or cupping, accurately over the other lateral cup, is a thin elastic membrane. This is secured in the upper leaf, so that when it is fastened down the cavity is closed air-tight. The regulation of this small disk is the nicest part of the whole instrument. A special apparatus is required to insure just the right tension, to prevent bagging or irregularity of surface, and yet allow the freest motion attainable, and also to provide for uniformity in the sphygmographs. The device *G* effects these purposes satisfactorily. It is simple and easily understood when seen, but its description here would be tedious, and therefore is omitted. A light pin, *H*, of proper length in vertical position, is attached by its thin flat base to the centre of the disk. From the distal end of the lower leaf, a perpendicular bar, *J*, rises, which gives support to the nice mechanical adaptations required by the tracing-lever. The latter moves on fine pivot-points, and its fulcrum can be moved nearer to or farther from the line of the pin. The point of the pin is directed by a small, hollow cone, *I*, to the place of its lodgment in a small socket made in the end of a delicate steel screw, the same forming the apex of the cone. The said screw traverses a slide, which fits closely to the base of the lever, and upon which it can be moved to or from the fulcrum, of course carrying the screw with it. The office of this fine screw is to provide an easy way for the nice adjustment in length required by the pin. And the adjustment of distance between the vertical pin and axis of the tracer may, if thought desirable, be effected in like manner by screw adaptations. Thus, by these arrangements, the tracer moves with the least possible friction; the distance between its fulcrum and point of power can be readily changed, so as to give a greater or less sweep of its point, and its line can be raised or depressed to the right degree. The lever *K* is five inches and a quarter long, with firm metal base and light steel point bent at an angle. The intervening point is of wood, made thin, but of sufficient width to prevent any vertical spring. There is no attempt at counterpoise, the lever being made as light as can be; it rises on the pin and falls on the same by its own weight.

The three-way stopcock *B*, when the key is horizontal and indicated side up, permits free communication between the central receptacle and lateral branches. If the key be turned to the vertical, from left to right, communication is cut off with the pin-branch and opened up with the tube-branch. On the contrary, if the key be turned to the vertical, from right to left, communication is cut off with the pin-branch and opened up with the tube-branch.

The watch-work *L* is placed directly over the central transverse line of the instrument, and is secured by screws to arms of metal attached to the lateral tubes near the limbs of the stopcock. It is patterned after the watch-work on Marey's sphygmograph, only it differs from the latter in having a mechanism for increasing or slowing the speed of the traveling stage. The latter, carrying the smoked glass *M*, is sufficiently shown. The cylindrical body *N* is a reservoir for liquid. It is provided with a close-fitting top, and a stopcock arrangement at the bottom, communicating with a small tube which leads to the vertical limb of the stopcock *B*.

The instrument in its entirety is simple in form and of neat, symmetrical appearance. It is sufficiently light, weighing filled about eight ounces. It measures from tip to tip of hinges twelve inches. Its height, with tube down and stage in place, is four inches. Its greatest breadth is one and three-quarters inch. The tube, with one-sixteenth of an inch bore, should be at least eight inches in length. The base is more natural on a line with the tubes, but may be placed diagonally or transverse to them.

Uniformity in the instruments is attained by their careful construction upon a uniform plan, with chambers and passages of the same form and size, and using rubber membranes, basic and discous respectively, of the same thickness and quality, at the same tension, and glass tubes of the same bore; and then, to be quite sure of uniformity of action, graduating the tubes by an equal measure of liquid, and gauging the sweep of the levers by a method soon to be described. Instruments thus constructed and prepared may be depended upon to return uniform results in the tracings.

To prepare the Instrument for Use.—We first unscrew the base, fill it with liquid by immersing it in the same and successively pressing and relaxing the membrane, or, which is more convenient, by means of a pipette, and, when full, screw it on again. We next fill the reservoir, leaving open the top, open the lids of the lateral cups, and holding the instrument free and level, and pressing gently with the finger the basic membrane so as to raise the liquid above the opening communicating with the reservoir, we turn on the liquid from the latter, which will traverse the lateral tubes and soon appear in the cups; removing at this point the finger from the membrane, we permit the cups to fill and overflow for a time. When quite sure that all air has escaped, we arrest the flow by a turn of the stopcock, and immediately thereafter shut down and secure the lids by their appropriate fastenings. We place the point of the pin in its socket, and press home the caps of the reservoir. The liquid now bulges slightly the basic membrane, presses lightly against the under side of the disk-membrane, cupped a little by the weight of the lever —if the latter have been adjusted—and stands in the glass tube near the half-degree mark. If we stand the instrument by its own weight flat upon a smooth, even, hard surface, the liquid will rise in the tube about an inch and a half, marking, say, two degrees, and, as no tracings can be taken below this point, we begin here to estimate the pressure upon the artery. And in this we have a criterion by which we can always place and maintain the basic membrane at a proper and uniform tension. If, under the circumstances named, the liquid rises above this point, the membrane is too slack; on the other hand, if the liquid does not attain this point, the membrane is too tense. The correction can easily be made. The tracer is set by turning the delicate screw that traverses it so that when the instrument is held free and level, and the liquid in the tube stands at half a degree, it is raised upon the pin just above its rest upon the stage. The proper sweep is obtained as follows: with the instrument as above, we turn the stopcock, cutting off connection with the tube, and opening up the same with the disk, and then set it flat as before, on a smooth, level surface, and note the rise of the point of the lever. Making, say, one inch the criterion, it is easy to bring the sweep to this measure by the proper adjustment of distance between the point of the pin's impingement and the fulcrum. The tracer having thus been properly set, it will stand for all ordinary work without change. If we now turn the stopcock so as to cut off the disk-branch, and open up the tube-branch, the sphygmograph is ready to place upon the artery.

We must not omit to emphasize the point, that the interior must be kept full of liquid to the exclusion of all air, the inclusion of a single bubble of which will vitiate the action.

To use the Sphygmograph.—We place the base accurately lengthwise over the artery, hold it steady, and bear down gradually, keeping the eye in the mean time on the column in the tube. This will be seen to rise, pulsating as it rises. When the point of pressure is reached which yields the greatest sweep of oscillation, we reverse the stopcock, cutting off and holding this column *in situ* and restoring connection between the liquid in the base and that in the opposite branch. Immediately this is done, the liquid in the tube stands at rest, and the tracing-lever is set in motion. The same force that caused the successive undulations in the tube is now turned upon the lever, causing its movements. Bearing steadily with the same pressure increased by just so much as will overcome the weight of the lever and establish the equilibrium between the basic and disk membranes, and so secure the greatest sweep of the tracer, and observing that the point of the latter just lightly touches the properly-smoked glass slide, we start the clock-work, and, as the stage is carried along, the tracing is obtained.

I have described the instrument as being held in place by the hand. This is undoubtedly the most natural and convenient method of using it. Any one with a steady hand and some experience with the instrument can obtain in this way tracings that are entirely satisfactory. At the same time, it is evident that the use and precision of the sphygmograph may be promoted by a suitable contrivance for steadily holding it in position on the arm. A light and easily adjustable pad and framework can be devised and constructed, which will answer the end in view.

When the instrument is being used daily, it may be kept constantly charged, and, in the intervals of non-use, all that is required is to turn down the tube and close the lateral cup by bringing down and fastening the opposite leaf. When it is not likely to be used for a time, it should be emptied of its contents, and put away with the passages all open. The filling and emptying are simple processes.

The Uses of the Tube.—In connection with the sphygmograph, there are three main uses of the tube: 1. It affords a free and convenient receptacle for the liquid displaced from the central cavity, as the instrument is pressed down on the artery. This provision allows the elastic membrane to embrace and press upon the artery so as to develop its proper tension, and establish the equilibrium between it and the artery—conditions requisite for the successful reflection of the pulsations. Again, this provision, in connection with the device for holding away the diverted liquid, insures the equilibrium of the small disk, and thereby the proper level of the tracer under all circumstances of different pressure required by different pulses. 2. By means of the tube, we readily set the instrument for the fullest tracing the given pulse will yield. The position of the base and degree of its pressure upon the artery which produce the highest undulation are very easily found, and, when found, the instrument is right for the tracing. This facility is in striking contrast with the delay and trouble one encounters in rightly placing the spring instrument. A great advantage too, is, that after the sphygmograph is placed in position by the aid of the tube, and the stopcock is turned, it may be removed by accident or design, and it only requires to be brought back unchanged to its original place and pressure, to be in condition to make exactly the same tracing as before. 3. By the aid of the graduated tube we determine the degree of pressure upon and compressibility of the artery. Of course, the amount of liquid displaced, as marked by the height of the column in the tube, bears a direct ratio to the pressure of the basic membrane over the artery, and the point at which the column evolves its maximum of rise and fall marks the pressure which places the membrane in proper tension to best reflect the arterial pulsation. In a soft pulse the pressure required will be light, and the greatest undulation will be seen low in the tube. On the contrary, in a tense pulse the pressure required will be heavy, and the greatest undulation will be seen high in the tube. This index of compressibility and its variations is unerring as regards the pulse of a single individual, but, as regards the comparison of pulses of different persons, allowance must be made for the difference of relation which the artery sustains to the surrounding parts: Thus, a superficially-lying artery will display its maximum at a lower level, and a deep-lying one at a higher level, when both arteries are really of equal compressibility. But this same difficulty is encountered under all the devices hitherto employed for estimating this quality of the pulse; and the method in question, used with care and due allowance for the circumstances named, is eminently satisfactory, and indeed, I believe, the best yet proposed.

The Sphygmometer.—The above are the chief uses of the tube as related to the sphygmograph proper; but the graduated tube with its basic receptacle may be considered as a separate instrument, and constructed and used accordingly. (*See* Fig. 1.)

Obviously the sweep of the liquid in the tube caused by the pulsations will be in direct ratio to the smallness of the bore within the limits of free motion. The tube I have adopted is about one-sixteenth of an inch bore, and gives an oscillation entirely sufficient. According to the amplitude of the pulses of healthy adults, the excursion varies in them from a little less than a quarter to a full half-inch. In cardiac hypertrophy a full three-quarters of an inch has been noted. In persons under fever without heart-affection a half-inch will not unfrequently be exceeded. These undulations are perfect reflections of the pulse exhibited to the eye. By them we may read the pulse as follows:

The amplitude of the pulse is shown by the height of the undulations.

The regularity of the pulse is shown by the rhythmic succession and equal stages and development of the undulations.

The frequency of the pulse is shown by the rapidity of succession of the undulations.

The quickness of the pulse is shown by the suddenness of ascent of the undulations.

The compressibility of the pulse is shown by the degree of elevation at which is displayed the maximum amplitude of the undulations.

The tension of the pulse is shown by the mark of compressibility in connection with the rate and manner of descent of the undulations.

The dicrotous of the pulse is shown by the distinct break in the line of fall, or, as frequently seen, a second rise from the line of fall, or bottom, of the undulations.

The minor sphygmographic curves even are at times shown by the lesser interruptions in the fall of the undulations.

Thus all the qualities of the pulse revealed to the fingers are faithfully and beautifully shown to the eye, by the tube and its pulsating column; and, more than this, the additional peculiarities brought to light by the sphygmograph may here often be discerned by one who will carefully look for them.

Incidentally, as of some interest, it may be mentioned that the column may be viewed through a properly-constructed magnifying-glass, and its undulations be seen in a magnified form; also, that the enlarged shadow of the undulations may be thrown upon a regularly moving screen, portraying there a correct though fleeting representation of the pulse, in imitation of the sphygmographic curves. Moreover, I cannot refrain from expressing the idea that, if, by a suitable apparatus, this undulating column could be photographed in sharp outline upon a prepared surface moving at a regulated speed, we might have a very beautiful piece of mechanism, and a graphic delineation of the pulse equal, if not superior, to that by any other method. Is it too much to hope that mechanical ingenuity and the photographic art may yet supply the way and the means for this fine accomplishment?

The Cardiograph.—The instrument is adapted as it is for tracing the action of the heart's apex against the chest-wall. With the subject in the supine position, all that is required is, to place the base over the point of greatest impulse and press it down between the corresponding ribs, and proceed as in taking the arterial pulse.

But, to operate the instrument with the subject in the standing or sitting position, which is often best adapted for securing tracings of normal or feebly-acting hearts, it is essential to have the rest of the instrument horizontal, while the base is vertical. This is easily provided for by an elbow-tube, screwed in place beween the base and stopcock.

With such a provision, when required, the conversion into a cardiograph is complete.

The question as to the best description of cardiac base has engaged my attention, but, after experimenting with bases of different forms and sizes, I am quite satisfied that with none have I obtained results better than would have been made with the use simply of the arterial base.

A base (*see* Fig. 6), with a circular rim an inch and a half in diameter, is well adapted to cases of forcibly-acting heart, and to persons, as children, in whom the intercostal sulcus is shallow.

But the simple sphygmograph, with or without the elbow-tube, operates so satisfactorily as a cardiograph as scarcely to leave any thing to be desired. My plan is, to use it almost invariably with the subject lying down: I place it over the point of greatest impulse, which is usually between the fourth and fifth ribs, a little within the line of the nipple. The pulsations in the tube indicate, as in the case of the arterial pulse, when it is rightly placed; only the index of pressure is here of little if any value, and it is important to cut off the column at the lowest level where the undulations are fairly developed. As regards the undulations in the tube, these are exact reflections in form of the heart's action, and the instrument is hereby constituted a *cardiometer*.

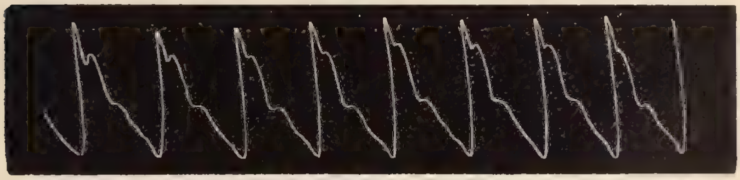
After the column has been cut off and the pulsations turned to the tracer, any pressure or adaptation is employed that yields the freest motion to the latter. The tracings are better taken, according to my experience, while the subject is breathing naturally at the time; the cardiograph held in place by the hand, and all rising and falling with the respirations. Cardiograms so taken follow the line of the respiratory curves, but some, at least, of the cardiac evolutions are finely delineated, and the result altogether is more satisfactory than where the subject, by direction, holds his breath; for these tracings, slides of extra width are necessary.

Summary of Qualities and Advantages that may at this Stage fairly be attributed to the New Instrument.—As already implied, the new sphygmograph is a very convenient instrument. It is light in weight, small in bulk, portable. It need not easily get out of order; the membranes, even, if taken care of, will maintain their integrity for a considerable time, and when at last these show failure they can be readily replaced by new ones. It can be easily placed and retained in position. It needs no strapping to hold it in position; though, as before remarked, if from any cause a retaining apparatus should appear desirable, this can easily be provided. It is adapted to trace the pulsations of any of the superficial arteries; and, as a cardiograph, to trace the heart's pulsations with the same facility that it traces the arterial. As a sphygmometer, it displays the arterial pulse to the eye; as a cardiometer, it makes visible also the cardiac pulsations. Such is the facility of its employment that this entails upon the very feeble no uneasiness or annoyance, and the pulses of infants can without trouble be recorded by it. Indeed, if proved true, the practitioner, who is interested in precise methods of observation, may carry this instrument with him in his daily rounds, and use it to note the pulse, as with the thermometer he notes the bodily temperature; further I will not say in this connection, but proceed to consider the

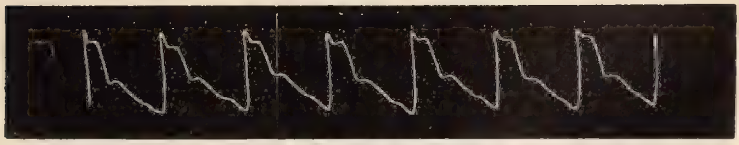
Truthfulness of the New Sphygmograph.—After all, the real value of the instrument turns upon its capability of accurately reflecting and recording the pulsations. Though doubtless susceptible of more or less modification in the mechanical arrangement and details, I flatter myself that the instrument is one which will bear a critical examination and study, and the careful consideration of whose principle and mechanism will commend it beforehand as adapted for very nice and faithful work. But the instrument must stand or fall by the character of the work it actually performs.

Tracings by the New Sphygmograph.—In illustration of the general character of the tracings, we first present a group of those by it and Marey's of the same pulses, taken at the same sitting, or as nearly as could be obtained under the same circumstances. The tracings by the old instrument we regard as exceptionally fine; they were taken with very great pains and after many trials, in order to get the fullest and best the sphygmograph was capable of in these cases. Except in No. 6, the stage of the new instrument was running at a slower speed than that of the old, which accounts for the appearance of greater frequency of pulsations in the tracings by the former. No. 6 was traced on a slide carried by the identical clockwork of Marey's instrument transferred to the new.

COMPARATIVE TRACINGS.



No. 1.—Dr. K.'s by Marey's.



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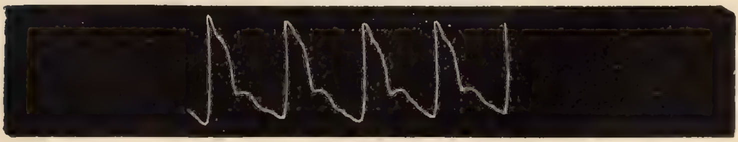

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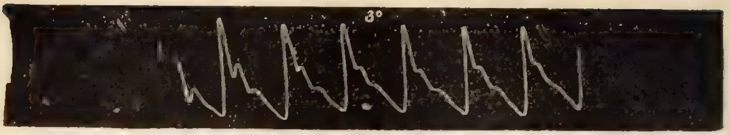

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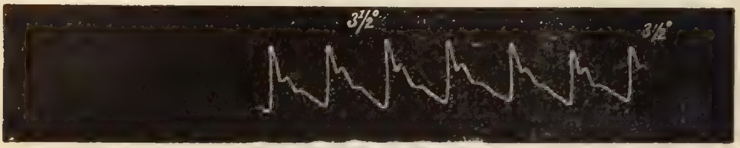

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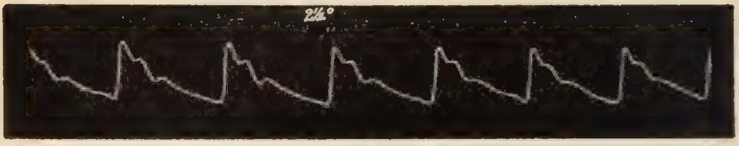

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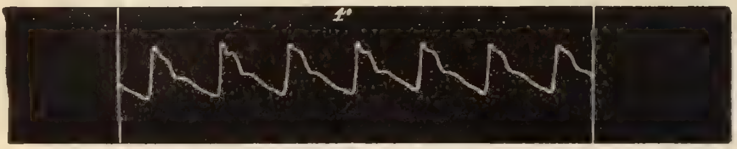
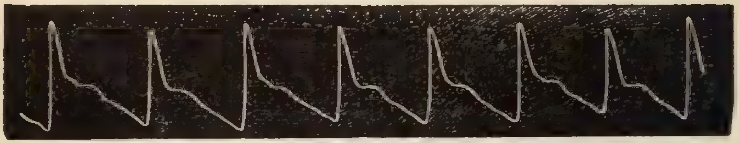
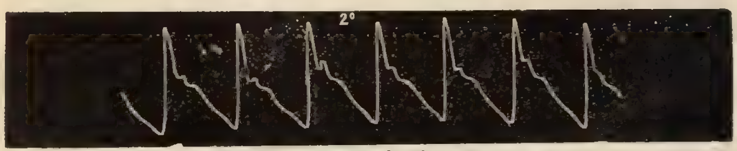


No. 7. Dr. K.'s. by the new.



No. 8.—Dr. J.'s by Marey's.



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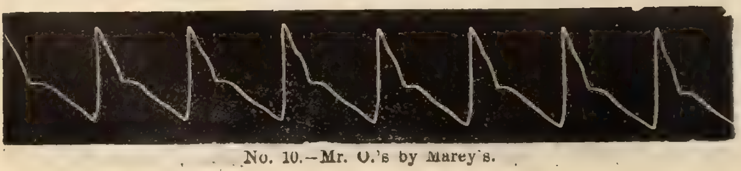
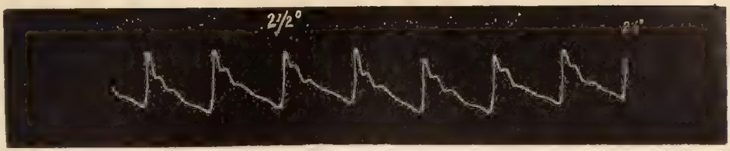


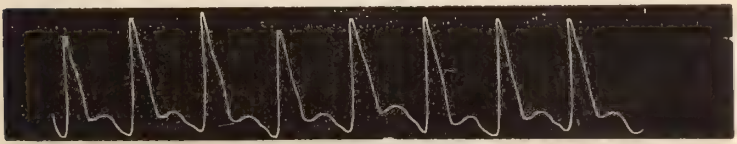
No. 10.—Mr. O.'s by Marey's.



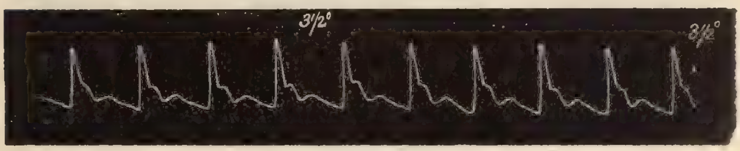
No. 11.—Mr. O.'s by the new.

We next present a comparison of tracings obtained by the two instruments at the same sittings in a case of heart-disease: H. Richards, aged seventeen years, has the physical signs and general symptoms of hypertrophy of the left ventricle with mitral regurgitation. The systolic apex murmur is loud and extensively diffused, yet the rhythm of his heart is perfectly regular and the tricuspid valve maintains its integrity. His cardiac affection followed an attack of acute rheumatism. The sittings occurred at an interval of several weeks.

FIRST SITTING.

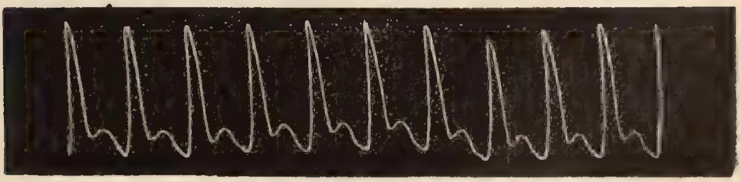


No. 12.—Richard's by Marey's.

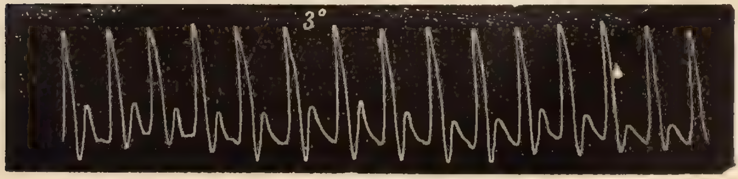


No. 13.—Richard's by the new.

SECOND SITTING.

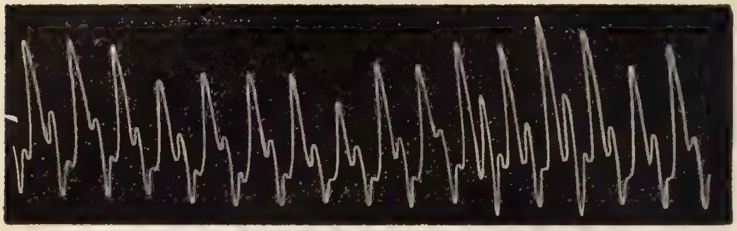


No. 14.—Richard's by Marey's.



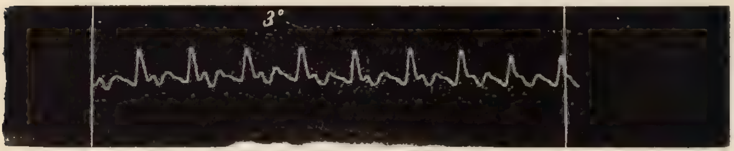
No. 15.—Richard's by the new.

At the last sitting was taken, also, by the new instrument, a tracing of his heart, which, though not pertinent to the comparison, is natural to the graphic history of the case, and we produce it here.



No. 16.—Richard's Cardiac Tracing by the new.

Also, we place here a radial tracing taken a day or two previous to the first comparative ones, when the patient was much prostrated, and suffering from severe dyspnœa.



No. 17.—Richard's by the new.*

A comparative examination of these tracings taken by Marey's instrument and mine, respectively, shows the two sets to be in general features remarkably alike. Both exhibit the primary or so-called percussion wave; the second or so-called tidal wave; the third or so-called dicrotous wave; and the fourth or so-called tricotous wave. I was gratified beyond measure to find this similarity of the delineations. Had there been considerable disparity between them, one might have doubted which, or whether either, was correct; and incredulity would certainly have rested more upon the new than upon the old. But happily both instruments, differing as they do in principle of mechanism, give substantially the same result, which we may accept as confirmatory that both are good instruments. One proves the other. I will not ask for a more favorable verdict than that these tracings of mine are as good as those of Marey's; though I would not find fault with the decision that the first gives a superior definition of the pulse-waves. Assuming, however, that a favorable judgment will be conceded to the new instrument as to fidelity, we proceed to state the uses to which it may be devoted, and afterward to give tracings, so far as we have had time to obtain and prepare them, to illustrate these uses, and coincidently all the qualities and capabilities we have ascribed to the instrument.

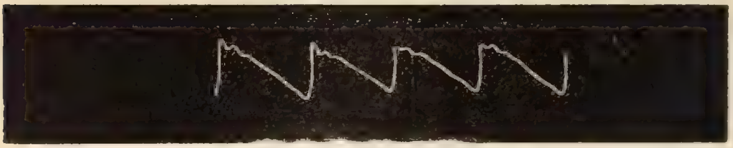
Practical Uses of the New Instrument.—The applicability of the combined instrument to physiological research is markedly apparent; but we are not now prepared to appreciate the extent of its range of service in this field. That definite and rich results await it here, we have every reason to be assured. The facility and accuracy with which it traces the heart and the various accessible arteries eminently qualify the instrument for successful use in working out certain unsettled questions in the physiology of the circulation, whose determination would be a most important advance. In further estimation, the principle here utilized may evidently be extended and applied to other mechanisms and special uses besides those described. We shall presently see how, when the instrument is in action as a cardiograph, it will trace at the same time the respiratory movements, indicating in this that by a suitable modification there may be constructed on this principle a very perfect *pneumograph.* And so it readily occurs to one that adaptations and adjustments easily made will qualify the instrument for other distinct purposes; thus materially widening the field of its usefulness in the department of physiological study.

But that which concerns us most as practitioners is the adaptability of the instrument to the purposes of practical medicine. Into the merits of sphygmography in direct aid to diagnosis, prognosis, and treatment of disease, it is not my purpose now to enter; but I merely state my conviction that it is now in its infancy, with a sure future before it of development and extended usefulness. To the realization of this future the new sphygmograph with its evident advantages is doubtless well adapted to contribute.

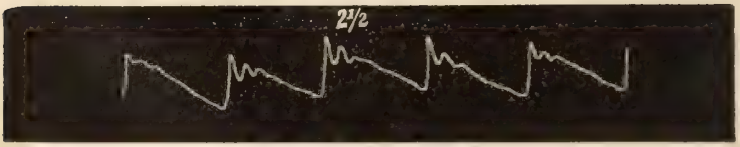
It is admirably suited for experimentation upon the action of remedies as they affect the circulation. The liquid in the tube is first adjusted accurately at its correct level, and then the point of the fullest sweep of the undulations exactly ascertained and noted before turning the force upon the lever. The best tracing having been thus obtained, after marking the line of the base upon the arm, the instrument is removed and the stopcock turned so as to let the liquid back into the central chamber. The drug is now administered, and, after sufficient time for its effects, the instrument is taken up, the liquid readjusted, and then placed upon the arm in precisely the same situation as before, the arm being, too, in exactly the same position, and pressed down until the liquid measures the same height as at first, and the best tracing again taken. A third is also taken at the measure now of the fullest sweep of the liquid. The three tracings with their pressure-marks are compared. Cardiac tracings may also be taken, one before and one during the action of the remedy, but evidently the pressure-gauge will not have the significance here that it has in relation to the arterial tracings. By careful procedure in this way, results may be obtained important in themselves, and which will illustrate and prove the value of the instrument in this branch of investigation.

TRACINGS ILLUSTRATING CHIEFLY THE PHYSIOLOGICAL USES OF THE NEW SPHYGMOGRAPH.

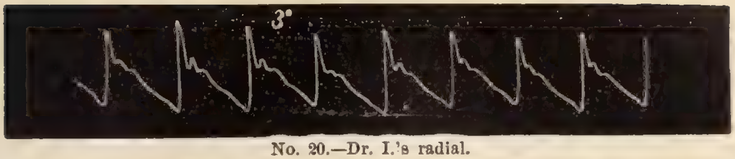
The first group under this head are tracings of the different arteries in healthy men :



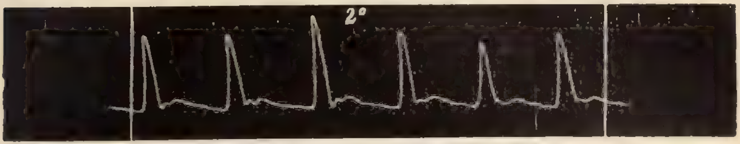
No. 18.—Dr. I.'s carotid.



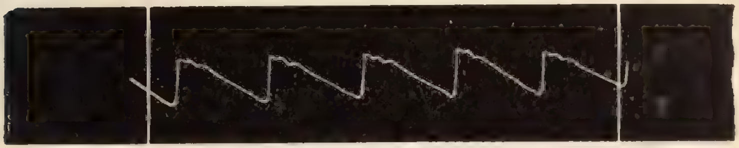
No. 19.—Dr. I.'s temporal.



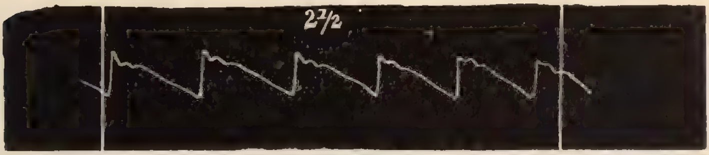
No. 20.—Dr. I.'s radial.



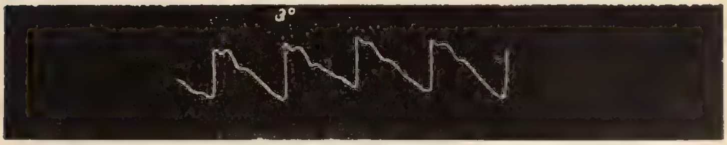
No. 21.—Dr. I.'s dorsal of the Foot.



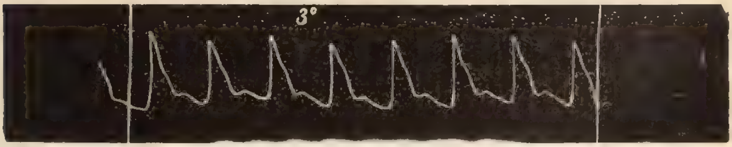
No. 22.—Dr. J.'s carotid.



No. 23.—Dr. J.'s temporal.

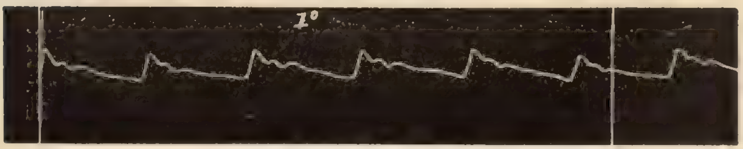


No. 24.—Dr. K.'s temporal.

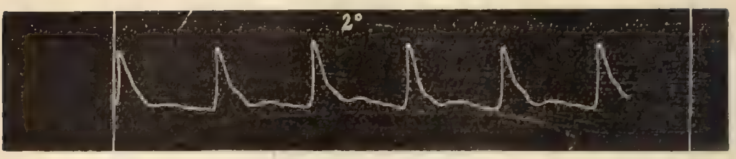


No. 25.—Dr. K.'s dorsal of the Foot.

CARRIAGE AT GREATER SPEED.



No. 26.—Dr. L.'s carotid.

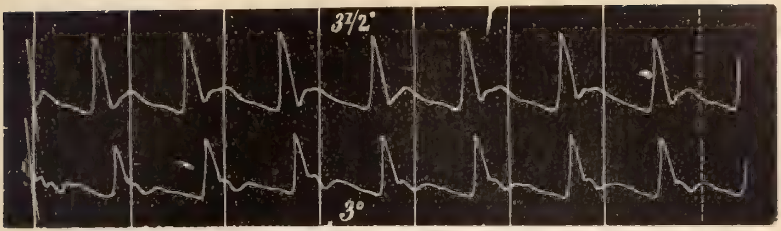


No. 27.—Dr. L.'s dorsal of the Foot.

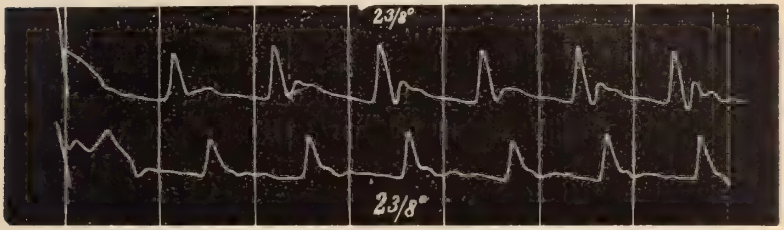
NOTE.—The space within the vertical lines, wherever seen across the tracings, indicates the speed of the carriage, which was carefully gauged by the run when fully wound up, in five seconds of time. Multiplying the number of whole pulsations included, and the fraction, when one exists, by twelve, gives precisely the number of pulsations per minute. The curved line at the beginning of the tracing is that made by the tracing point before the start of the carriage, and is added to show the true relation of the upward sweep to the line of direction made by the tracer.

The next group were taken by two sphygmographs set, as nearly as could be with the means at hand, at the same speed, each placed on a different artery, and, while the levers were well playing, marking the starting-line on the slide, started, or intended to be, at the same moment. The subject was Dr. Lowrey, a young gentleman in health, but whose pulse is habitually bounding and dicrotous, and frequently betrays irregularity. The slides were immediately marked in pairs, the tracings fixed in the usual way, and afterward given to the engraver with the curved line made by the point of the tracer on each preserved, with instructions to cut the tracings one above the other on the same block in such relative position that a perpendicular line would pass through the points of intersection between the curved lines and the horizontal line of the bases of the tracings, and also to cut the curved lines and this vertical line, and seven other vertical lines, all equidistant from each other, so that six consecutive spaces would be equivalent to the gauge of the carriage for five seconds.

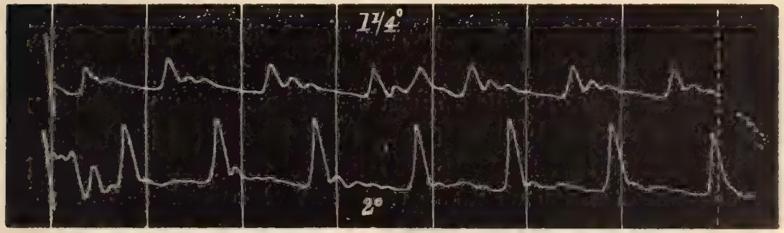
Evidently the irregular beginning of the tracings was due to the slight jog unavoidably given the instruments at the starting of the clock-works; but this could in no way modify the result. Perfection of tracing could not well, under the circumstances, be secured, nor was it aimed at so much as the starting of the carriages at the same instant. The object of these experiments is sufficiently obvious.



No. 28.—Result of Experiment 1st: upper, the radial; lower, dorsal of Foot.

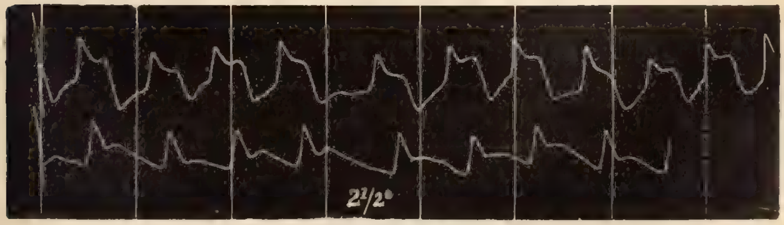


No. 29.—Result of Experiment 2d: upper, the radial; lower, dorsal of Foot.



No. 30.—Result of Experiment 3d: upper, the carotid; lower, dorsal of Foot.

In the following experiment—4th—the subject was a little girl four years old, healthy, but whose pulsations are also irregular in rhythm. One instrument was placed upon the heart, the other upon the radial artery, and both, as in the others, intended to be set going simultaneously.



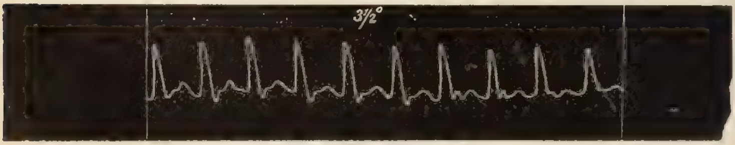
No. 31.—Result of experiment 4th.

These experiments may be wanting in mathematical exactitude, but I feel sure that the difference in time of the pulse varies, as shown in the beginning of the tracings, and that they are at least approximately correct. If any error at this point exist, it arose from the manner of starting the instruments, which was simply by the attempted simultaneous action of two fingers, one on each trigger; and, if the discrepancy in time is observed to widen as the lines progress, it was due to the carriages not being regulated to exactly the same speed. However, it is evident the possibility of error may be entirely obviated by perfection of simultaneous starts, and uniformity in speed of the carriages, which perfection is readily attainable. The point, I trust, is illustrated, how well adapted is the combined instrument to the solution of physiological problems.

TRACINGS ILLUSTRATING THE CLINICAL USES OF THE NEW SPHYGMOGRAPH.

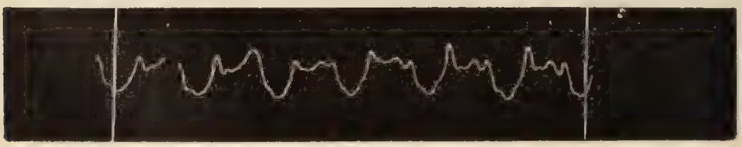
Blanche Budden, aged eleven years, sickened July 1, 1875, with what proved to be well-marked typhoid fever, with temperature-range, diarrhœa, intestinal hæmorrhage, dry brown tongue, sordes, bronchial affection, deafness, delirium, rose-spots prostration, etc. July 11th, I commenced the record of her pulse, which we read as follows:

July 11*th.*—Pulse as in tracing.



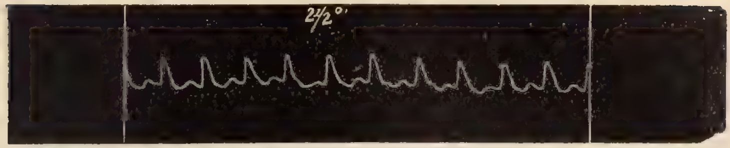
No. 32.—Pressure, 3½°.

No. 33 gives the cardiac pulsations combined with the respiratory curves of the same date.



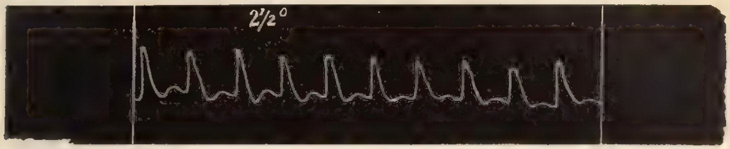
No. 33.

July 12*th.*—Respirations, 60; pulse as in No. 34.



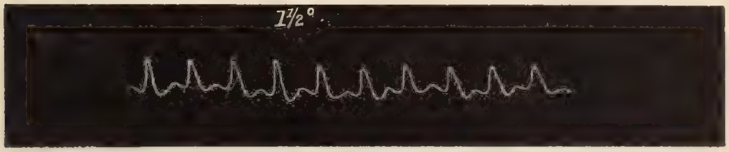
No. 34.—Pressure, 2½°.

July 13*th.*—11 A. M., respirations, 56; temperature, 104°; pulse as in No. 35.



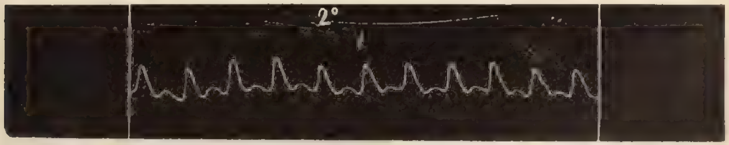
No. 35.—Pressure, 2½°.

July 14*th.*—11 A. M., prostrated from severe intestinal hæmorrhage; respirations, 48; temperature, 104°; pulse, 130, and as in No. 36.



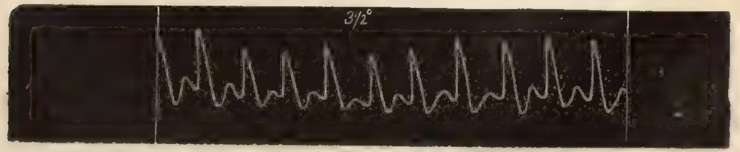
No. 36.—Pressure, 1½°.

July 15*th.*—12 M., bloody stools continue; respirations, 56; temperature, 102°; pulse as in No. 37.



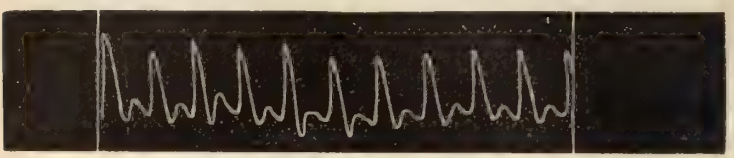
No. 37.—Pressure, 2°.

July 16*th.*—12 M., respirations, 52; temperature, 104°; pulse as in No. 38.



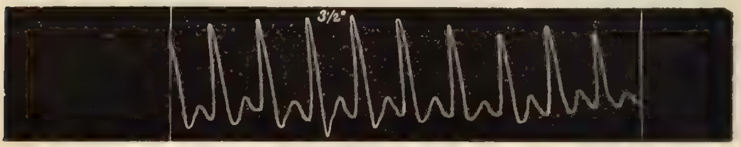
No. 38.—Pressure, 2⅛°.

July 17*th.*—11 A. M., respirations, 44; temperature, 104°; pulse as in No. 39.



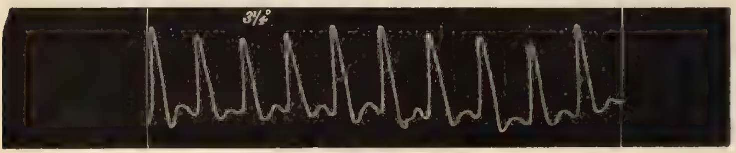
No. 39.—Pressure, 3°.

July 18*th.*—1 P. M., respirations, 44; temperature, 103⅗°; pulse as in No. 40.



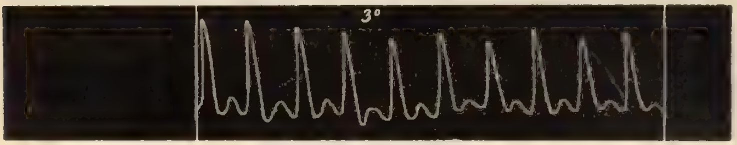
No. 40.—Pressure, 3½°.

July 19*th.*—12½ P. M., respirations, 44; temperature, 103⅕°; pulse as in No. 41.



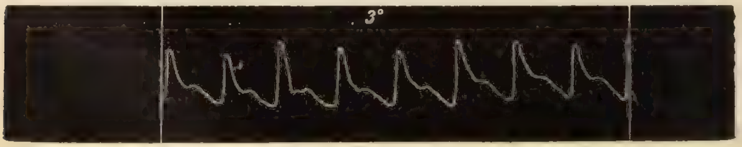
No. 41.—Pressure, 3¼°.

July 20*th.*—1 P. M., respirations, 34; temperature, 100°; pulse as in No. 42.



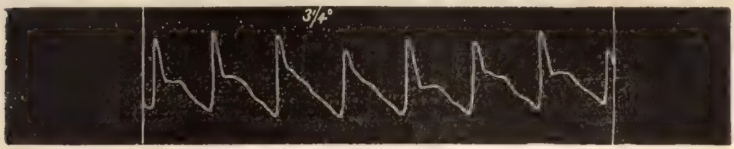
No. 42.—Pressure, 3°.

July 21*st.*—1 P. M., respirations, 32; temperature, 99⅘°; pulse as in No. 43.



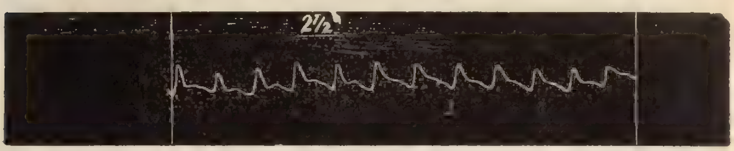
No. 43.—Pressure, 3°.

July 25*th*.—12 M., respirations, 20; temperature, normal; pulse as in No. 44.



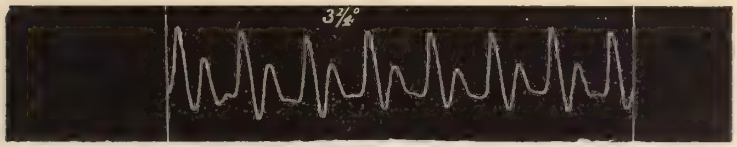
No. 44.—Pressure, 3¼°.

The tracing No. 45 is of a little boy 4½ years old, taken on the fifth day of pneumonia. Respirations, 44; pulse —.



No. 45.—Pressure, 2½°.

No. 46 is the pulse of a boy ten years old, suffering from remittent fever; temperature, 102°.

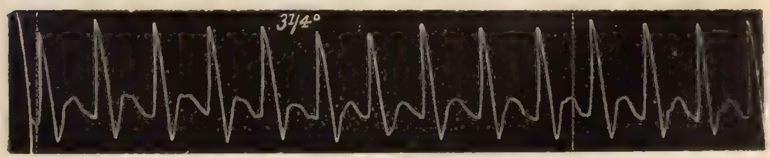


No. 46.—Pressure, 3¼°.

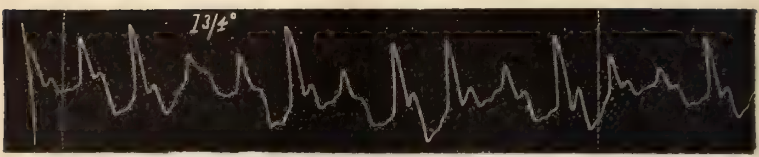
TRACINGS IN A CASE OF INTERMITTENT FEVER.

W. C., a large, grown, previously healthy boy, aged sixteen years, suffered recently from severe tertian intermittent. The pyrexia lasted thirty-six hours, and the apyrexia twelve hours. During the second febrile period, tracings were begun to be taken, and the record is as follows:

September 7*th*.—Temperature, 105°; pulse as in No. 47.

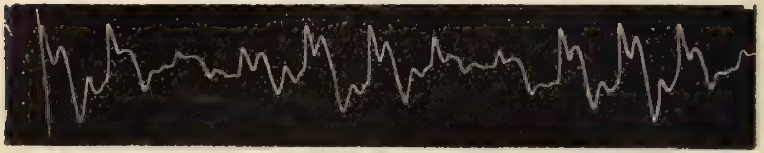


No. 47.



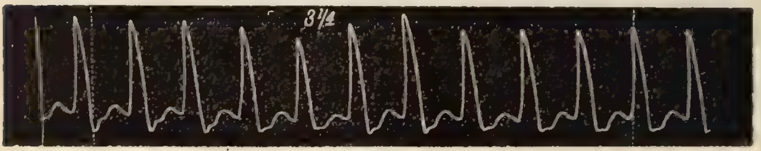
No. 48.—Cardiagram of same Date.

Sept. 8*th.*—No fever; cardiac pulsations as in No. 49.

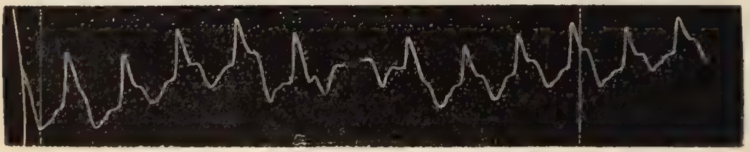


No. 49.

Sept. 9*th.*—Temperature, 105°; pulse as in No. 50.

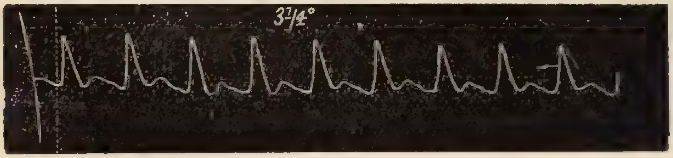


No. 50.

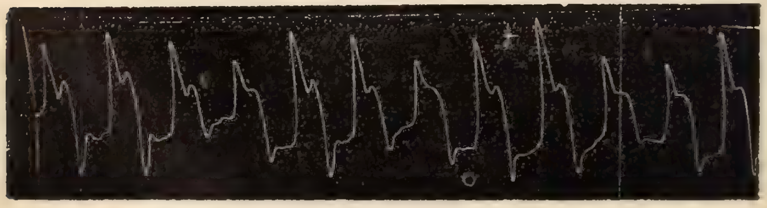


No. 51.—Cardiagram of same Date.

Sept. 10*th.*—Temperature, normal; pulse as in No. 52.

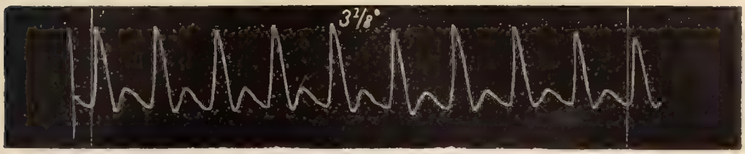


No. 52.



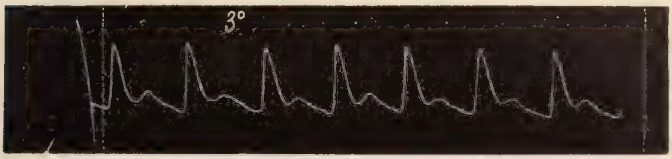
No. 53.—Cardiagram of same Date.

Sept. 11*th.*—Temperature, 100°; pulse as in No. 54.

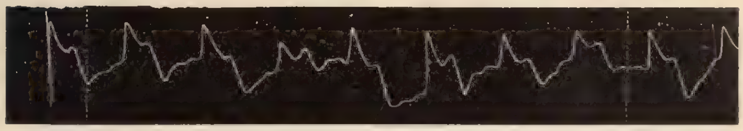


No. 54.

Sept. 13*th.*—Temperature normal; pulse as in No. 55.

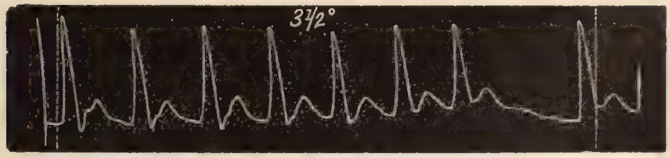


No. 55.



No. 56.—Cardiagram of same Date.

Sept. 22*d*, when patient appeared to be fairly convalescent, I called him into my office with the view of procuring from him a normal pulse-tracing to place in contrast with the above, but my surprise was considerable to find his pulse too frequent, bounding and intermittent. Its character is shown in No. 57.



No. 57.

Many other tracings from our collection might be used, but we hope enough have been given to fairly illustrate the instrument and the character of its work.

In reference to novelty and originality of the instrument described, I will say that it was conceived and worked out without the knowledge on my part of any mechanism utilizing any essential part of its principle having been previously devised. And after a pretty thorough inquiry as to instruments employed in the study of the circulation, I find nothing to imply that the combination is not new. It is true the tambour polygraph and mercurial kimograph have points of similarity and suggestiveness, but it is true also that they essentially differ in principle, in construction, in operation, and in results. From the first, however, I felt that the principle of the sphygmometer must have been used before; that a principle so obvious could not entirely have escaped my predecessors, reflecting upon the means by which the pulsations of the arteries and heart might be shown to the eye. Accordingly, I found with a feeling of gratification rather than disappointment that Dr. Scott Alison, twenty years ago, then at the Brompton Hospital, had applied and measurably appreciated the principle in the contrivance and use of an instrument which he called a sphygmoscope, and a larger one that he named the cardioscope (*Lancet*, American edition, 1856, p. 526).

Dr. Alison was under the impression that he had invented something new, but afterward found that the same principle had been adopted twenty years before him by M. le Docteur Hérrison, in the construction of a complicated mechanism which he named the sphygmometer.

Whenever it becomes apparent that my combination has been put in practice previous to 1875, I will cheerfully renounce priority, but must still assert originality of invention.

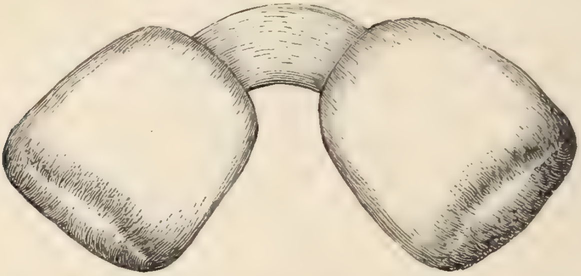
Finally, I would express the hope that this sphygmograph may become established in accordance with the good opinion I entertain of it, and that in the hands of investigators and physicians its influence may be to extend sphygmography in the interest of medical science and of medical practice.

ART. IV.—*The Cotton Pessary.* By R. A. PAGE, M. D., Washington, D. C.

AT a time when uterine disease is becoming daily better understood, and more intelligently and successfully treated, the inability to obtain a form of uterine support which is of practical value is the source of a great deal of annoyance to those whose practice, like my own, is largely composed of cases of this class. Among the numerous inventions and improvements of pessaries to which the attention of the profession is constantly called, I have been unable to find one which could be used with comfort to the patient. My mind being constantly exercised upon the subject, I have at last hit upon one of form and material which, though extremely simple, seems, from the success I have had in the use of it, to unite all the qualities long sought in vain in these instruments.

The idea was suggested to me by the medicated cotton-wad, which I have been using for some time in cases of metritis, erosion, follicular ulcer, etc. In these cases, when there was prolapsus or version of the uterus, I found that, if the wads of cotton were made large enough to be held firmly by the vaginal walls, they gave the uterus considerable support. It occurred to me that, if the same material could be put in such a shape as to receive support from the pubis, as in the instruments of Hodge, Higbee, and others, an instrument would be obtained uniting the support to the uterus, given by the best pessaries now invented, with perfect freedom from irritation of the parts and discomfort of the patient. Immediately upon the conception of this idea, I prepared an instrument, and, after giving it a fair trial, find it more than realizes my highest anticipations. It can be worn without discomfort, is elastic, retains its proper position while yielding to the motions of the body, is not an obstruction to the passages of the bladder or rectum; and being made of raw cotton, like the wads so much in favor at present, can, like them, be medicated to suit the requirements of various forms of uterine disease.

The form of the instrument is that of a tiny dumb-bell, i. e., a shaft with a ball on each end. It is made in the following manner: For an instrument of the ordinary size required take a piece of hard rubber rod, either hollow or solid, the thickness of a lead-pencil, and about one inch and a half long. This may be bent in any desired curve by running it through the flame of an alcohol-lamp and moulding with the fingers. The rod thus prepared is laid upon a piece of cotton-batting, about ten inches long by eight wide; the long edge must be folded over about an inch and a half on each side. The rod is then placed at the short edge of the cotton and firmly rolled the whole length of the piece, after which it is wrapped in the centre tightly with strong sewing silk for a space of about an inch and a half, leaving a soft, compact, and elastic ball at each end. Over the wrapping I sew a piece of lint very smoothly, with the nap outside, and the pessary is complete.



If the edges of the cotton are properly folded over before the rod is rolled in it, they will not fray or ravel, and will protect the ends of the rod sufficiently; by laying small wads at each end of the rod before beginning to roll it up in the cotton, this may be made additionally secure. The cotton-batting I prefer is that used by jewelers, which is very white, soft, and clean, and about an inch in thickness.

I have made and used this pessary without the curved rubber rod, and have found it act very well in cases of prolapsus, but it is not so comfortable as the curved instrument.

In introducing the instrument with the Sims speculum, the uterine extremity is placed in the desired position, the other end is pushed up under the arch of the pubis, and held there while the speculum is removed. In this way it enables me to effectively apply local remedies, combining with them a gentle and unirritating pressure, which in cases of capillary engorgement and enlargement of the cervix is of great value. For the application of styptics in menorrhagia, or flooding, it is an excellent tampon.

This pessary can be retained two or three days, and after its removal can be cleaned, if necessary. I generally remove the tenacious mucus from the surface, and in the majority of cases the character of the discharge is such that it will not penetrate the surface, and, after soaking it in a mild solution of carbolic acid for a day or two, adjust the cotton and use it again. It can be made so cheaply, however, that such economy is unnecessary.

In cases of ante- or retroversion, by placing one of the ends of the instrument, after it is anointed with glycerine carbolate, in the anterior or posterior *cul-de-sac*, the uterus is completely supported. In these cases it is best for the physician to apply the pessary himself, but one of its great advantages is, that in cases of prolapsus the patient can soon learn to apply it herself if she is properly instructed, thus saving much of the time and expense which a proper treatment of these cases generally involves.

Having endeavored to describe as clearly and fully as possible my invention, and the various advantages obtained by its use, I present it for the consideration of the profession, believing that this simple contrivance, which, in the hands of an ingenious physician, may be used in various ways, will supply a want which has long been a hinderance to the successful treatment of uterine diseases.

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

Operation for Ununited Fracture of Radius and Ulna.—The following case is of interest in showing how a case of fracture of the radius and ulna behaves when left to itself, and also the results which occur after operation for false joint: The patient was a man, aged thirty-nine years. Three years ago he received an injury which caused fracture of both ulna and radius, at the lower third. After the injury, the arm was painful, but, when three or four weeks had elapsed, he found that it began to improve, to an extent sufficient to allow of its use, but he noticed, also, that a false joint existed at a point a short distance above the wrist. The arm was of use in lifting and carrying weights, but in other respects it was relatively useless. One year ago, he fell down on the ice, and again injured that arm. This second mishap tore up the old adhesions, and increased the deformity. Three months afterward he entered hospital. It was then found that no union had taken place at the site of fracture; it was found, moreover, that the supinator-longus muscle drew the lower radial fragment upward, causing a very marked deformity.

To obviate this the tendon of the muscle was divided subcutaneously, the fragment reduced, and the arm placed in anterior and posterior splints. After several weeks the splints were removed, and, as no union had taken place, it was considered wise to drill the ends of the fragments. After a reasonable time, the extremity was examined, and no union was found to exist. A second operation of drilling was practised, but still with no result. Finally, a third operation of drilling was had recourse to, but without avail. On November 11th the arm was closely examined, and it was found that there was slight osseous union of the ulna, and at the same time a considerable amount of fibrous union. The radius had no osseous union, and there was inability to pronate and supinate the arm. Dr. Markoe then proposed to exsect the ends of the fragments and wire them, and for this purpose he made an incision through the skin three-fourths of an inch long on the inner border of the ulna, and carried it down to the periosteum. It was then found that the fragments were in good position, and had between them a certain amount of bony union. Dr. Markoe elevated and incised the periosteum, covering the fragments, and removed sufficient to allow of their being properly adjusted. A similar incision, two inches long, was made along the outer side of the radius, and it was found that the radial fragments were overlapped and fused with those of the ulna. The periosteum was elevated as on the other side, and sufficiently resected to bring the radial fragments into position, and at the same time to sever the union between the two bones. After having performed the operation of excision, the fragments of the respective bones were united by means of silver wires. After the operation anterior and posterior splints were applied, but subsequently the arm was placed in a plaster-of-Paris bandage. Apparently, at the present time, union has taken place, but the extent cannot be decided on certainly before the dressing is taken off. The result will be reported hereafter.

Compound Fracture of the Frontal Bone; Operation of Trephining.—A man, aged twenty-five, entered the hospital on December 11th, with the following history: While on shipboard he slipped and fell into the hold, striking upon his head. On admission to the ward, about two hours after the injury, he was found to be suffering from concussion, but was easily aroused. A wound was found in the left frontal region, above the eye, about an inch and a half long, and at the bottom of it a fragment could be felt with the finger, but the dimensions could not be ascertained. During the day the patient was slightly delirious. In the afternoon an incision was made transversely through the wound. It was then discovered that there was a transverse fracture of the frontal bone extending from the wound outward and backward into the temporal fossa. Another fracture extended nearly vertically downward to the orbit. At the apex formed by these two lines of fracture, there was a depression to the extent of half an inch. By means of the trephine and the bone-forceps, or curved *rongeur*, an inch of the apex was removed, because of the impossibility of elevating the depression. The frontal sinus was opened into, but no laceration of the dura mater by the depressed bone occurred. Immediately after the operation the temperature was 105°, but after two days it was only 103°.

CHARITY HOSPITAL.

Poisoning by Carbolic Acid.—A patient of the hospital, while walking down to the boat, suddenly fell down and died. He had been in the habit of taking whiskey and ether in large quantities by the stomach, and had latterly commenced the use of carbolic acid. At the autopsy a large portion of the mucous membrane of the stomach was found completely blackened, and the organ emitted a strong smell of carbolic acid. The cause of the sudden death was not accounted for, but the condition of the mucous membrane of the stomach was of interest, in showing the local effect of the agent.

VENEREAL SERVICE.

Sloughing Chancroid of the Labia treated by Carbo-Sulphuric Paste.—A patient entered hospital with a sloughing chancroid of the labia majora, labia minora, and fourchette. The disease had lasted for six weeks, and had burrowed beneath the integument of the mons veneris. Previous to admission no treatment had been pursued, but, on entering, the sore was dressed with carbo-sulphuric paste. After one application the character of the chancroid changed and manifested a tendency to heal. Applications of balsam of Peru were subsequently made, and the case made a good recovery. The carbo-sulphuric paste is made by mixing charcoal with strong sulphuric acid till a paste of the proper consistency is obtained. It is then spread over the surface of the chancroid to the depth of about one-twelfth of an inch.

SMALL-POX HOSPITAL.

The number of cases in this hospital at the present time is barely half of what it was at the close of 1874. This is due, in all probability, to the efforts which the Board of Health have taken to vaccinate the city thoroughly. The class of cases does not differ very much from that of former years. Recently there have been three cases of croupous laryngitis developing after an attack of small-pox, each of them proving fatal.

Typhoid Fever a Sequel of Variola.—One case of particular interest, from its rarity, has been under observation recently. The history is as follows: A young lady contracted small-pox in the city and was removed to hospital. The type of the disease was mild, and had it not been for the sequel would have terminated, in all probability, in recovery. Ten or twelve days from development of the eruption, and about the period of desiccation, the patient was attacked with epistaxis. This was followed by a slight chill. From the condition of the body no typhoid eruption could have been discovered, and if present there was no diarrhœa and there were no abdominal symptoms. The temperature was 103° in the morning and 105° in the evening, and continued so till the end. No sign of pneumonia could be detected. The patient was given quinine and whiskey in ordinary amount, but at the end of twelve days died from exhaustion. The general condition of the patient was good till the last two days. The diagnosis of the case is unfortunately not as clear as might be wished, but from the exclusion of any inflammation it must be set down as fever. The only symptom that pointed directly to typhoid was the epistaxis. Unfortunately, no autopsy was obtained. It is fair to assume, however, that, after the attack of small-pox had passed away, the patient developed either typhoid or an attack of common continued fever. This latter disease is by no means uncommon at the present time, and, with the exception of the eruption and diarrhœa, it is impossible to distinguish it from real typhoid.

ST. FRANCIS'S HOSPITAL.

Gangrene; Treatment with Salicylic Acid.—Dr. N. G. McMaster has used this acid as an application to gangrenous surfaces, with marked benefit in keeping down the intolerable odor. One case, particularly, was satisfactorily treated in this way. Bromine had first been applied, then carbolic acid, then poultices of charcoal, but the odor was nevertheless sufficient to exclude the patients from the ward. The salicylic acid in powder was then either dusted on the surface or blown into cavities, as necessity indicated. After the thorough use of this agent the offensive odor was completely controlled.

Perforation of Chest-Wall from Phthisis.—There is a man, aged thirty-three, in this hospital, who presents some peculiarities not often noticed. That which is of special interest is, the perforation of the chest-wall, in connection with a large phthisical cavity. At first, it would seem as if there had been an empyema, but no history of such can be obtained; and, moreover, the place of perforation would not accord with that view of the case. The point of perforation is beneath the clavicle, and about two inches from the sternum. It is readily detected by causing the patient to expire forcibly, when air and fluid make their way out beneath the skin. It seems as if an effort was being made by Nature to allow of the cavity emptying itself, as if it were an abscess. The liver of this patient has undergone extensive amyloid degeneration. It extends down to within an inch of the umbilicus, and across to a point three inches to the left of the median line. The future history of the case will be reported in another number of the JOURNAL.

MOUNT SINAI HOSPITAL.

Atresia of Urethra; Cystitis.—There is at present in this institution a case of atresia of the urethra with the development of a urethro-vaginal fistula. When the case is examined, the sound passes into the meatus urinarius, but is arrested at a point not more than half an inch from the meatus. On examining the vagina a fistula is found, through which the patient passes water. The sound enters this about half an inch, but is then arrested. The patient is now suffering from cystitis.

Silicate-of-Soda Bandage.—When it is desirable to place a patient in light immovable dressing, and when, moreover, it is not requisite that the dressing should harden in a few minutes, the silicate of soda presents decided advantages. The method of applying it is, first, to carry around the limb an ordinary roller bandage. The solution of soluble glass is then painted over it, and another bandage applied. By repeating the number of layers of the bandage, and alternating them with coatings of the solution, any degree of strength may be obtained. One grand advantage is, that the dressing, when applied, looks well and is light.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 2, 1875.

DR. S. S. PURPLE, President.

AFTER the reading of the reports for the year of the different committees, the following nominations were made: For Vice-Presidents, Drs. J. H. Hinton and Fordyce Barker; for Trustees, Drs. S. T. Hubbard, George A. Peters, and J. O. Stone; for Committee on Admissions, Drs. J. E. Janvrin, T. M. Cheeseman, F. H. Otis; for Committee on Ethics, Drs. O. P. White, Moreau Morris, S. Caro, and E. G. Loring; for Committee on Education, Drs. C. C. Lee, Alonzo Clark, Gurdon Buck; for Library Committee, to consist of five members, Drs. C. M. Allen, H. Farnham, A. E. M. Purdy, J. R. Leaming, J. H. Hinton, W. Parker, Jr., G. Baylis, H. T. Hanks, W. Johnson, C. A. Leale, G. M. Smith, H. G. Piffard.

On Functional Disorders of the Heart, characterized by Noticeable Infrequency of the Pulse. By DR. AUSTIN FLINT.—Dr. FLINT drew attention first to the ordinary symptoms of functional disease of the heart, such as paroxysms of tumultuous or irregular action, occurring at irregular intervals, and lasting for from a few minutes to several hours. He mentioned also a rare case of increased frequency of the pulse, occurring in a lady, without any other signs of grave disease. The pulse maintained a frequency of from 100 to 140 per minute, without any change in the rhythm, and continued so for years. No organic disease could be detected. Dr. Flint said he considered the case as one of normal rapid pulse.

In passing to the consideration of the subject of the paper, he gave the history of several cases which came under his observation. The first one was a woman, aged twenty, suffering from syphilitic laryngitis. When she entered the hospital the pulse was 40 per minute, and, although the operation of tracheotomy was performed, no change took place in the pulse. After a time she was discharged, but, on reëntering, the pulse counted 16 per minute, but by degrees increased to 40. At times the heart would cease beating for sixteen or eighteen seconds. No lesion of the heart could be distinguished. The second case was a lady, aged thirty-five, whose pulse averaged 40 per minute. Several years afterward, she died of typhoid fever, and, on examining the heart carefully, no sign of disease could be made out. The third case was a man, aged thirty-eight. He had an attack of pneumonia, and after convalescence the pulsations varied from 35 to 46. The fourth case was a man, aged fifty-three. He suffered from intermittent fever. The pulse registered 26 beats per minute. Under the influence of cathartics and quinine it rose to 36 on the third day, 42 on the fourth day, 60 on the fifth day, and 80 on the sixth day. Eventually he recovered completely. The fifth case was a man aged forty-six, who suffered from malarial fever. The pulse had been 75 per minute in health, but sank to 40 and 30. Eventually it rose to 50, then to 74. The sixth case was an anæmic patient aged forty-three. Nine years ago he was accepted by an insurance company, and granted a policy, and the inference was that the pulse was not abnormal to any marked extent. When he came under observation the pulse was 26 per minute, but afterward rose to 40.

In reviewing the cases, Dr. Flint said that a distinction must be made between those cases in which the pulse registered a low number at the wrist, while the heart made the average number of pulsations, and those in which the heart only pulsated the number of times that the radial artery indicated. In the first class, the cause was due to the fact that a number of the pulsations of the heart were so weak that the wave was not detected by the finger at the wrist.

Dr. E. R. Peaslee said that two cases similar to those referred to by Dr. Flint had come under his notice. The first was a physician, who had been out of practice for twenty years. His normal pulse was 38 per minute. The second case was a man, aged forty-five. His pulse averaged 40 per minute. Dr. Peaslee said that in both these there was pain in the occipital region, and, in his opinion, the seat of the disease was the medulla oblongata. The cause of the depressed pulse was the use of tobacco, for when both of the cases ceased to use it the pulse rose to the ordinary rate. During the war Dr. Peaslee was an examining surgeon for recruits drafted from the lower portion of the city. He found that a large number of those who were presented had a pulse ranging between 40 and 50, and on inquiring into the matter found that all of those so affected were cigar-makers, with ages varying from twenty-five to thirty-five. The effect of emotion was illustrated by telling a recruit that he was accepted. Immediately the pulse increased to about the normal rate. On examining them closely it was found that with some of them, as Dr. Flint had suggested, though the pulse at the wrist counted only a small number, the heart had the average number of pulsations, but about half were so weak that the wave could only be felt for a short distance along the main vessels.

Dr. A. Jacobi said that decrease in the number of the pulsations of the heart might be produced by one of two causes: first, paralysis of the sympathetic nerves distributed to the heart; and, secondly, irritation of the pneumogastric nerve. If no irritation of the pneumogastric could be made out, Dr. Jacobi was of the opinion that the cause could be usually found in the sympathetic nerves or ganglia, and in this manner phenomena could be accounted for which have usually been attributed to functional disease of the heart. Dr. Jacobi suggested, also, that the sympathetic ganglia may have undergone some degeneration, or the vessels supplying them may have been contracted or dilated, and instanced hemicrania as illustrating the possible condition. Hemicrania, as it occurred in neurotic persons, he said, was of two varieties: the spastic, or that in which there was a contracted state of the vessels; and the paralytic, or that in which there was a dilated state of the vessels.

Dr. F. N. Otis referred to the case of a man, thirty years of age, who, during an attack of acute epididymitis, was found to have a pulse counting only 46. At the same time it was noticed that the perspiration was very profuse. The pulse remained at the same rate for three days.

Dr. Blumenthal said that, in an experience of twenty years, four cases of this kind had come under his observation, and he had noticed that it was the forerunner of disease.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 24, 1875.

DR. FRANCIS DELAFIELD, President.

Aneurism of Abdominal Aorta; Lead-Poisoning.—Dr. J. R. LEAMING, on behalf of a candidate, presented a specimen of aneurism of the abdominal aorta, which was of special interest from the fact that the patient had suffered from lead-poisoning. The paroxysmal attacks of abdominal pain complained of by the patient were, in all probability, the result of the aneurism, and not due, as was then supposed, to lead-colic. The history of the case was as follows:

The patient, a man thirty-seven years of age, had been for the past twenty years engaged in the manufacture of straw goods. In the process of manufacture a large amount of sugar-of-lead was employed, and as a result of this the patient suffered from lead-poisoning, characterized with periodical attacks of abdominal pain and constipation. When the patient first came under observation, he was suffering from one of these attacks. The lead-line around the margin of the gums was well marked, and there could be but little doubt as to the diagnosis of the case.

The treatment of the patient consisted in the administration of saline cathartics, in conjunction with enemata of ox-gall. After the attack had passed away, the iodide of potassium was continued, with sulphur-baths. He was seen some time afterward, and it was found that the lead-line on the gums had disappeared, but no improvement had taken place in regard to the attacks of abdominal pain and constipation. Last September he was seen by Dr. John T. Metcalfe, who made out the diagnosis of aneurism of the abdominal aorta. On September 29th the patient died, after suffering for forty-eight hours from internal hæmorrhage.

Autopsy.—The cavity of the abdomen was found to contain an extravasation of blood, which had escaped from a ruptured aneurism of the abdominal aorta. The colon was contracted, as also was the ileum. Dr. Leaming read quotations from Aitken and other authorities, which went to prove that poisoning by lead gives rise to a permanent contraction of the colon and ileum, as was shown in the specimen presented. The only cause to be assigned for the aneurism was a strain, caused by lifting a heavy weight last March. No aneurismal bruit could be heard over the back. The patient never complained of any pain in the lumbar region, but was frequently subject to a tired feeling.

Report on a Previous Case of Abortion.—Dr. M. PUTNAM JACOBI presented part of the cervix of the uterus, which was presented to the Society at its last meeting, by Dr. Finnel. The doctor said there was thrombosis of the veins posterior to the vagina, and extending up into the uterine sinuses.

Dr. DELAFIELD said an important point to settle was, whether the thrombosis, dissected plainly out, was primary or secondary. He was of the opinion that under ordinary circumstances it should be considered as secondary.

Removal of Part of Catheter from the Bladder.—Dr. STIMPSON presented a portion of an elastic catheter which he had removed from a patient under the following circumstances: The patient was a German of middle age, who suffered from paraplegia, with incontinence of fæces and urine, resulting from an injury received from being run over by a wagon. The patient purchased a cheap catheter, and, while in the act of passing it, broke it, and left eight inches in the bladder and urethra. In the attempt to remove the fragment it was pushed completely into the bladder. When he came under the notice of Dr. Stimpson the prepuce was tied up with a string, like the neck of a sack, to prevent the dribbling away of urine, and, although considerable œdema resulted from this primitive method of proceeding, the patient did not complain of much pain. Dr. Willard Parker removed a portion of it with a lithotrite, and eight days afterward Dr. Stimpson repeated the operation and removed the remainder. No cystitis resulted from either of these operations, and after the removal of the catheter the incontinence was so far improved that he was enabled to hold his water for six hours. A peculiarity of the case was, that the urethra was exceedingly flabby, and markedly insensible to any irritation.

Suppurative Disease of the Sacro-Iliac Synchondrosis.—Dr.

Erskine Mason presented the right os innominatum and sacrum which he had removed from a patient who had been under his observation in Roosevelt Hospital. The history was as follows: A. B., a man aged sixty-one, entered hospital January 20, 1875. He said that four months before he had been attacked with severe pain in the right hip. This pain extended down as far as the knee, but was not so severe as to prevent his walking about. Nineteen days before admission he detected a tumor on the thigh, just below Poupart's ligament. On being examined in hospital a soft tumor was found immediately below Poupart's ligament, and measuring four and an half inches vertically by four inches transversely. Considerable pain was complained of as existing at the inner side. This was thought to be an abscess, and on February 4th was aspirated and found to contain pus; one month afterward the pelvis was examined by pressing together the sacrum and right ilium, when pain was complained of. The diagnosis was made at this time of sacro-iliac disease. No swelling of the buttocks was detected, but the abscess beneath Poupart's ligament was evacuated several times. The patient was usually kept in bed, but at times was able to get up and walk without suffering pain. On June 9th fluctuation was detected in the gluteal region, and on August 20th intense pain was complained of in the left hip. Upon the introduction of a hypodermic needle, pus was detected. Shortly after this the patient developed a bed-sore, and following this there was diarrhœa, from which the patient died on September 24th.

Autopsy.—The right sacro-iliac articulation was found to be in a diseased state. The ligaments were destroyed, and the bones were eroded. Dr. Mason said the disease was of interest from its rarity. No case, to his knowledge, had been previously presented to the society. The age of the man was also another point of interest. According to Erichsen, the disease was one of middle life. Another peculiarity of the case was that pus appeared first anteriorly, beneath Poupart's ligament, and eventually in the gluteal region. The ordinary site for pus to appear was either in the gluteal region or in the rectum. The left sacro-iliac synchondrosis was perfectly healthy.

Dr. Mason had a case in Charity Hospital where he applied a hot iron to the back. The patient was compelled to rest in bed, and eventually he completely recovered. No abscess appeared, and there was no tilting of the pelvis. The principal symptom the patient complained of was his inability to walk without experiencing severe pain.

Dr. Delafield said that he had seen four *post-mortem* examinations of disease of the sacro-iliac joint, and in neither of them had there been a diagnosis made. They were all adults. Dr. Mason said that an examination of the specimen would show an erosion of the bones. No cheesy matter could be found, and in this respect it was unlike either Pott's disease or hip-joint disease, but resembled suppurative disease of the vertebræ, which was sometimes seen. Erichsen had never seen a case of disease of the sacro-iliac joint get well; but Hilton recorded the case of a child who recovered after abscesses had formed. Erichsen had never seen it in childhood or in old age.

Ilio-cæcal Abscess.—Dr. R. F. Weir presented a specimen which he had removed from a man under the following circumstances: The patient was nineteen years of age, and suffered during last May with a fever, which lasted for three or four weeks. The fever was accompanied with diarrhœa, but no positive history of typhoid could be obtained. On October 9th he entered Roosevelt Hospital, complaining of pain in the right side, which had existed for seven weeks before admission. There was also diarrhœa. A tumor was discovered in the right iliac region, extending up toward the liver. This tumor, the patient said, developed after he recovered from the attack of fever. On examining by the rectum, the tumor was found pushing down from above. Slight dullness was noticed at the dependent portion of either pleura. On October 12th the pain increased, and an aspirator-needle was inserted an inch and a half anterior to the spine of the ilium, and some pus was obtained, enough to confirm the diagnosis of abscess. On the next day the needle of the aspirator was again inserted into the abscess, and made to act as a guide for the introduction of the knife. An opening was then made of sufficient size to allow of the introduction of the finger. The pus which was evacuated was not fecal, but afterward fæces appeared at the external opening. After the period of a week, the wound closed, and the patient left the hospital on pass, and when he returned the tumor had reappeared. On November 10th he died from peritonitis.

Autopsy.—The intestines were found matted on the right iliac fossa. The incision was found to have entered the abscess opposite the distended jejunum. The jejunum showed evidences of perforation.

Excision of Head of Humerus.—Dr. R. F. Weir also presented a specimen of necrosis of the head and neck of the humerus, which he removed from a patient by the operation of excision. The patient was forty-eight years of age, and complained, at different times, of rheumatic pains in the shoulder. Subsequently abscesses formed anteriorly and posteriorly, and the diagnosis was made of suppurative synovitis of left shoulder-joint, resulting in necrosis. Dr. Weir decided to exsect the head and neck of the bone, and to do this he proposed to make a straight incision along the anterior part of the shoulder, and in this way preserve the long head of the biceps. At the operation three and a half inches of the upper part of the head of the biceps were taken out, in three sections. On exposing the joint it was found necessary, from disease of the glenoid cavity, to remove it, and for this purpose Dr. Weir said he found a sharp scoop of great value in getting at the whole of the necrosed bone. One week after the operation the patient had so far improved as to be able to leave his bed and be up and about. No cause was discovered for the disease of humerus and shoulder-joint.

Dr. Mason wished to know how far Dr. Weir's patient was able to move his arm directly out from his side. Dr. Weir said about six or seven inches. Dr. Mason said he had a case where the patient was able to move his arm sufficiently to lift it over his head, but he was unable to extend the arm any distance from the trunk. One inch of the head and neck was removed. Dr. Mason was of the opinion that this powerless state of the arm was not due to paralysis of the deltoid muscle from injury to the circumflex nerve, but from the fact that, when the upper portion of the humerus was removed, the origin and insertion of the deltoid muscle were approximated and thus unable to contract.

Necrosis of Digital Phalange; Paronychia.—Dr. A. C. Post presented the first and part of the second phalanges from a patient who had suffered from paronychia for seven weeks. Dr. Post was of the opinion that free and deep incisions will stop sloughing of the tendons and necrosis of the bones.

Calculus.—Dr. Post also presented some specimens of calculus which he had removed by the operation of lithotrity. The history of bladder-trouble went back only till last July. The patient made a good recovery after the removal of the fragments of the stone.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, December 6, 1875.

The Cause of the Death of Vice-President Wilson.—Dr. W. A. Hammond read a paper on this subject, and proposed to prove, first, that Mr. Wilson did not die of apoplexy, as was stated by the newspapers; and, secondly, that the medulla oblongata was the seat of the lesion that proved fatal. The reason urged by Dr. Hammond against the view that the death was due to apoplexy was, that no clot of sufficient size to prove fatal could be discovered, and the only recent clot was about the size of a pea, and situated in the choroid plexus. There were no lesions in the heart of sufficient importance to warrant attributing the death to heart-disease; and the same was true of all the other thoracic and abdominal viscera. Allusion was made to the possibility of death being due to *reflex vaso-motor spasm*, or, in other words, to that form of death which is caused by taking a draught of cold water, and which results from a fatal anæmia being produced in that part of the medulla oblongata which furnishes the origin of the pneumogastric nerve. The reason of the possibility of this was that, on taking a glass of bitter-water, death took place. Dr. Hammond's opinion was that, as has been before stated, the fatal lesion occurred in the medulla oblongata, and was probably the result of atheromatous degeneration of the arteries supplying the upper part of the spinal cord. The main facts that supported this diagnosis were, a marked amount of calcareous degeneration of the basilar artery, as well as of the arteries given off from it; and, secondly, a series of changes in the stomach which afforded still stronger evidence of changes in the medulla. From the investigations of different observers, it might be considered as proved that changes in the upper part of the spinal cord result in lesions in the stomach, such as ecchymotic spots, etc.; and in the case of Mr. Wilson different erosions of the mucous membrane of the stomach were found.

Bibliographical and Literary Notes.

ART. I.—*Cyclopædia of the Practice of Medicine.* Edited by Dr. H. VON ZIEMSSEN. Vol. X. *Diseases of the Female Sexual Organs.* By Prof. CARL SCHROEDER. Translated by E. W. Schauffler, M. D., Leonard Wheeler, M. D., Wm. L. Richardson, M. D., E. B. Bronson, M. D., J. H. Emerson, M. D., and Paul F. Mundé, M. D. A. H. Buck, M. D., editor of American edition. 8vo, pp. viii.–575. New York: Wm. Wood & Co., 1875.

WE are informed by a note from the publishers, which accompanies this work, that the tenth volume is issued in lieu of the fourth, in order to meet the requests of many subscribers.

The author occupies no room with introductions, but, after devoting a little more than two pages to "History," proceeds to the practical questions of interest to gynæcologists. Some space is given to the consideration of "gynæcological examination," including the instruments in common use. This portion is very practical, and, making due allowance for the inferior instruments that seem to be in favor in Germany, it is tolerably satisfactory. Nothing will be found in this department, however, that may not be read in other text-books.

The various diseases of the uterus and its appendages are taken up in a systematic manner, especially in regard to their etiology and pathology. The pathological portion of the work strikes us as the only one worthy of special commendation. The author has given us chiefly his own opinions on the subject, and they are generally sound and logical, though it would have rendered the treatise more complete had others more frequently been allowed a hearing on disputed points.

In treating of malignant affections, the author divides them into two grand divisions, as follows:

"In the first place we declare that we neither separate the malignant papillary tumors from the cancroids, nor the latter from carcinomata. We follow the views of Waldeyer, who refers the origin of all the forms of cancer to the true epithelia, considering them all as epithelial tumors, which develop, without exception, from actually existing epithelium; and who, in the very rare cases where primary carcinomata have developed in places where there is no native epithelial soil, regards them as arising from abnormally distributed remnants of the epithelial blastodermic membrane. They are thus sharply defined from sarcomata, which are pure connective-tissue tumors.

"The carcinomata, then, are developed by normal pavement or glandular epithelium penetrating with its ramifications into the depths of the tissues in all directions like plugs, destroying the other tissues by pressure, and forcing apart the bundles of connective-tissue fibres, so as to form for itself a framework of connective tissue, and an alveolar structure for the whole tumor. According, now, to the preponderance of either this connective-tissue framework—which is also partly a new formation from the initial connective tissue—or the nests of cancerous epithelium, we distinguish the harder forms—scirrhus, and the softer—medullary cancer.

"A more strict separation of these forms is, from a clinical point of view, impracticable; for, multiform and differing in appearance as are the forms which here present themselves, they still have precisely the same significance, very commonly in the same individual pass one into another at some place or time, and consequently must be considered as belonging together throughout."

The description of the different forms of cancer and of their development is equally clear and interesting. Ungovernable sexual passion is mentioned as one of the *symptoms* of that disease, rather than as a cause if indulged in. Removal of as much as possible of the cancerous mass is advised, followed with the hot iron, and the subsequent use, as soon as the eschars begin to separate, of such a caustic as tends to destroy as little as possible of the healthy tissue. The remedy which has proved most satisfactory with Schroeder for this purpose is one part of bromine to five of alcohol. "A tampon of cotton, well soaked in the solution, is pressed against the wound, and retained in place by another tampon covered with bicarbonate of soda" (p. 293). The escaping bromine is said only to excoriate the mucous membrane, so that if the soda does not completely neutralize it no harm is done. When rather large knobs cannot be removed, he injects the solution into the mass. The application is repeated every eight days, and a very weak vaginal injection of the same is used between times.

With the exception of some of the disorders of menstruation, Schroeder classifies and describes the several affections upon a pathologico-anatomical basis, and even these are in a certain degree treated of in connection with the organic condition giving rise to the menstrual derangement. Concerning the mechanism of "normal menstruation" he avails himself of the investigations of Kundrat and Engelmann, and gives a succinct and excellent description of ovulation and the effect of conception, according to their theory.

The author sharply defines two kinds of cyst formation (exclusive of dermoid cyst) in ovarian tumors, namely, "dropsy of the Graafian follicle," and "cystoma." The former—follicular dropsy—is said to be a "retention-cyst," the same as tubal dropsy and collections within the uterus formed from the natural Graafian follicles; while the latter is a true adenoma, or one formed from the glandular epithelium or gland follicles—the preliminary structures out of which the Graafian follicles are developed. While Schroeder says it is possible to determine the etiology of dropsy of the Graafian follicle, he says the origin of a true cystoma is not definitely known; he thinks, however, that they are always congenital, and do not usually become developed until after puberty. The "cystoma" of Schroeder we should judge is identical with the "multiple ovarian cyst" or "proliferous cyst" of Spencer

Wells, although the mode of development is not explained in the same way. Schroeder explains the occurrence of tubo-ovarian cysts by supposing that a perforation of the cyst takes place into the adjacent tube, thus differing from Kolb, who believes that the fimbriated extremity of the Fallopian tube grasps the ovary at the time of rupture of a Graafian follicle, and holds it there while the secretion from the tube and follicle are mingled in a common cavity. So far as treatment is concerned, the author opposes the injection of tincture of iodine, but recommends at least one tapping. When ovariotomy is performed, he seems to prefer, all things considered, the extra-peritoneal method of securing the clamp. On page 415 we notice a cut of a circular clamp, said to be Spencer Wells's "new" one. Wells tells us in his book that he has discarded the circular instrument on account of its liability of cutting the pedicle, and returned to the use of his old one, with the modification of a screw at each end. His cuts all indicate a straight clamp. Mention is made of Thomas's vaginal ovariotomy, and Miner's operation by enucleation.

The weakest part of the volume is that devoted to the treatment of flexions and versions of the uterus. Not only can the student learn nothing of value in regard to the use of pessaries, but the advice given is positively misleading and dangerous. Nor can we say much more for the directions given for performing the operations for restoring the perinæum, closing vesical and rectal fistulæ, etc. For instance, speaking of vesico-vaginal fistula, the author says: "If it is a tolerably old fistula it is not apt to heal naturally, at least the vesico-vaginal fistulæ with sharp edges are not; nevertheless, the irritation caused by the uterus, the presence of urinary concretions, or the forced passage of a urinary calculus, may occasionally provoke the development of granulations, and in this way cause a closure of the fistula." We have certainly never had the good fortune to see a "tolerably old" fistula cured by any of these accidents. The simple operation for closing rupture of the perinæum is described in such a manner as to bewilder even an accomplished operator, and the cut intended to illustrate the introduction of sutures is little better than a Chinese puzzle. Many of the cuts are absurdly proportioned, and represent uteri which, if straightened and replaced, would reach above the diaphragm.

On the whole, we consider the volume one of much value, but very far from being a complete text-book on gynæcology. We should be sorry to believe that it represents the present status of gynæcology in Germany. If the student or practitioner could afford only one book on the subject, this is certainly not the one we should recommend.

The translation is well done, and the style is generally good, while the execution of the work and its general appearance are very creditable to the publishers.

ART. II.—*A Practical Treatise on Diseases of the Eye.* By ROBERT BRUDENELL CARTER, F. R. C. S., etc. With numerous Illustrations. London: Macmillan & Co., 1875.

IT is a long time since we have read a book which has given us so much pleasure and profit as this one has done The author has been known to the profession as a writer for some time, and this volume embodies the substance of his lectures at St. George's Hospital. It is not a text-book in the sense in which the term is generally employed; nor can it be called an exhaustive treatise on the diseases of the eye. Indeed, the author plainly disavows his intention of attempting to achieve that kind of completeness which is produced by undigested compilation, and speaks mainly of what he has seen and known. The first five chapters are taken up with what may be called introductory work: I. "Anatomy and Physiology of the Eye;" II. "On the Examination of the Eye;" III. "The Ophthalmoscope and its Application;" IV. "The Principles of Ophthalmic Therapeutics;" V. "The Principles of Ophthalmic Surgery." The remaining chapters, ten in number, are devoted to the different affections of the eye.

Anatomy and physiology are briefly considered, with special reference to their bearing upon questions which arise in practice. The methods of examining the external tunics of the eye, and of the functional tests, acuteness of vision, visual field, etc., are treated of in a concise and interesting manner.

The author prefers, "perhaps from parental partiality," his own instrument for measuring the visual field, and we are inclined to think that it is the most handy instrument of the kind yet given to the profession, but still prefer for most purposes an ordinary blackboard, or the simple movements of the hand in different directions, while the patient looks steadily at the eye of the surgeon.

In speaking of the ophthalmoscope, Mr. Carter credits Mr. Babbage with having constructed the first ophthalmoscope as a purely optical problem; but, unfortunately, he placed it in the hands of an English ophthalmic surgeon, who did not appreciate the practical value of the means of observation thus afforded, and left its introduction to Helmholtz and Graefe four years later.

The theory of the instrument and its application are very ably presented. Mr. Carter has shown his familiarity with this subject before in his translation of "Zander on the Ophthalmoscope," but we are at a loss to understand why he has omitted to describe and figure the last instruments of Loring and Knapp.

Chapters IV. and V. are the most interesting and instructive in the book, and contain a kind of writing which is only too uncommon in ophthalmic literature. The principles of ophthalmic therapeutics are too often ignored by the specialist; indeed, one is sometimes led to wonder whether there are any principles governing the administration of remedies for affections of the eye.

The tendency of the ophthalmologist is to look upon all affections as only local, but Mr. Carter goes into the remote origin of eye-disease (we are inclined to think goes rather too far in speaking of the derangement of nervous function), and gives some excellent rules for the proper employment of drugs.

The chapter on "The Principles of Ophthalmic Surgery" is replete with useful hints which are applicable to ophthalmic operations generally, and shows that the author has given much time and attention to this most important branch of surgery. He considers first the mechanical acts to be accomplished, and the difficulties to be overcome in their performance; and next the training of the hands to their duties.

If any thing short of the opportunity of seeing operations well performed and the chance of performing them for one's self can make a good operator, a careful study of such plain, practical rules as are here laid down would do it. But, as the author truly remarks, "it is impossible to acquire manual dexterity merely by watching others, partly for the reason that the facile working of a finished operator conceals from spectators the difficulty of that which he accomplishes. His skill is like the simplicity of perfect English composition, which, as Dugald Stewart long ago said, induces the reader to think that he also could write in a similar manner." "The invention of many instruments by a surgeon," says Mr. Carter, "as a rule, may be accepted as sufficient proof of his clumsiness. The safest man is he who never invented an instrument in his life, but whose daily practice affords evidence that he can use those which have been invented for him by others." We are pleased to see that Mr. Carter advocates the use of ether as an anæsthetic, and generously accords the credit of its more general introduction in England to the efforts of Dr. B. Joy Jeffries, of Boston.

In the chapter on conjunctival diseases considerable space is devoted to the contagiousness of trachoma and other forms of conjunctivitis in crowded institutions. The author has made the cause of outbreaks of ophthalmia in several such institutions a special study, and recommends a systematic disinfection of buildings and their contents where such diseases prevail, and that special care should be given to ventilation. Mr. Carter says that pterygium is scarcely at all amenable to treatment, and does no harm unless it extends over the cornea so as to obstruct vision, and then iridectomy should be made. This is the very worst of advice, and we think the author would have hard work to find a single ophthalmic surgeon to agree with him. It is true that mere excision of the growth is apt to fail, but if the defect, left after its removal, be covered by healthy conjunctiva, or the operation of transplantation as recommended by Knapp be performed, it does not usually return.

The author recommends discission combined with suction for all cases of cataract in patients under thirty, except in infants, and in those cataracts which have undergone liquefaction. Here, again, we must disagree with him. It requires far more than ordinary dexterity to use the suction-instrument, and is now pretty generally abandoned on account of the danger of subsequent inflammation. Mr. Carter condemns, in very strong terms, the transverse corneal incisions for extraction of cataract, and is a warm advocate of the method of Graefe. He is also in favor of operating upon the more advanced cataract before the other eye is blind, because it gives the operated eye a longer period of rest before it is brought into use than it would otherwise obtain. This and other equally good reasons exist for such action, which we think should always be followed.

The most incomplete chapter in the book is that on diseases of the fundus. The author devotes some space to the discussion of an important subject, the relation of the optic nerve to the intervaginal and subarachnoid spaces. He is a disbeliever in the adverse effects of the abuse of alcohol and tobacco on the sight, except so far as every malady which assails a drunkard is probably in some remote degree due to his vice. But this opinion is contravened by our own experience and many published observations. We should be very sorry to follow the example of Mr. Carter in trusting a hypodermic syringe, for the purpose of injecting strychnine, to some member of the patient's family. We cannot agree with the statement that sarcoma of the choroid is extremely rare. Such is not in accord with common clinical experience, at least not in this country; nor yet abroad, if we may judge from the experience of writers.

After enucleation of an eye, it is advised to plug the orbit with a sponge for a few hours. We have never resorted to such measures to control hæmorrhage; the bleeding may be easily controlled by exposure to the air before putting on the bandage.

But it is a thankless task to find fault with a book so good in the main, and we conclude by heartily recommending every one interested in this branch of surgery to give it a careful perusal.

Art. III.—*A Treatise on Therapeutics, comprising Materia Medica, Toxicology, etc.* By H. C. Wood, Jr., M. D., Professor in the University of Pennsylvania, etc. Second edition, revised and enlarged. Philadelphia: J. B. Lippincott & Co., 1876.

It seems hardly necessary to again so soon call our readers' attention to this book, for the sale of a large edition, within a year, shows that it has already been appreciated and accepted by the profession. We take advantage, however, of the issue of a new edition, to correct the unfavorable impression which our, perhaps, rather hasty review of the first may have produced.

It is a hopeful sign of progress that such a book can find a ready sale; and it testifies to the great desire which the profession, as a whole, has for a more intimate knowledge and understanding of the mode of action of the drugs, the prescribing of which occupies so important a part in their daily routine. Probably no prescription is written without the prescriber's having some theory, crude though it be, as to the way in which his dose is going to do good; so that the good of our patients, and our own hopes of success, demand that these theories should be based on the best ascertainable facts.

Empiricism has taught us much, and we cannot altogether despise its teachings; still, as Dr. Wood justly holds, the *facts* which it has taught are few, and many of them still stand on very unstable foundations, ready to be hurled over by the first rude assailant. Moreover, it vouchsafes no reason or explanations of the questions which perplex us, such as are so eagerly sought by every thinking mind. To the solution of these problems by scientific methods, problems the most difficult in the whole range of medical research, modern investigators and experimenters have devoted and are devoting much time and attention. The advances in physiology, particularly in the physiology of the nervous system, and in pathology, have both aided their attempts and made practical the results thus far obtained. No attempt has, however, hitherto been made to gather together these results scattered as they are through current medical literature, in several languages, and in an immense number of journals. To collect, compare, and harmonize and thus make generally useful these discoveries has has made been the main object of Dr. Wood's efforts. By so doing he renders accessible to experimenters the work of their collaborators, thus showing what has been done and what remains to be done, and so saving much valuable time. In fact, no experimenter "can afford to be without it."

Some have objected to the experimental study of the physiological action of medicines, that it never has given, and never can give, us any practical knowledge to aid in the treatment of disease. In his rather long preface Dr. Wood quotes Niemeyer as holding to this belief.

To all such, we can say that a study of some of the articles in Dr. Wood's book would, we are sure, convince the most skeptical. For here we find numerous instances, where a careful study of the physiological action of medicines has served not only to explain how certain well-known results are brought about, but to point out new fields for the application of the drug, fields into which empiricism has never and might never have stumbled.

Certainly, if therapeutics is ever to be placed on a scientific basis, if the crowning point in medical practice is ever to be kept up to or ahead of its sister branches, in the giant strides which they are making in the knowledge of the causes, pathology, natural history, diagnosis, and indications for treatment of disease, it is only to be done by carefully studying and adding to our knowledge of the action of medicine, first in health, and then as modified by disease.

Therapeutics can never become an exact science, and perhaps it is scarcely to be desired that it should. A scientific foundation or groundwork is, however, certainly attainable; in fact, has been attained much more satisfactorily than the majority of our practitioners imagine. This does not render practice easier, but rather adds new requisites of knowledge, in the way of understanding and being able to diagnose more intimately diseased processes. Without a clear knowledge of physiology and pathology, all attempts to apply the new facts in regard to the action of medicines must be abortive. The strengthening of one link renders necessary the strengthening of all.

But let us turn rather from these rambling thoughts to the subject of our notice.

We are sorry that Dr. Wood did not boldly break away from established usage, and reject all attempts at classification. He only claims for a classification that it serves the purpose of a convenient row of pegs, on which to hang our ideas and facts. But do we need any such assistants, and do they really aid us? Ringer has adopted a plan quite as convenient, and one which does not have so many disadvantages — that of bringing together in groups medicines which have a similarity of action, or, where the action of a drug does not resemble any other, of considering it alone. The advantages of this plan are, that the student does not have constantly before him the idea that quinine is a tonic, or alcohol a stimulant, but he learns to consider quinine as an individual drug, which has a variety of actions, complicated and varied, and by no means to be described in a word; actions, moreover, all of which it is important should be borne in mind. Dr. Wood's classification is very good as far as it goes, but it is simply impossible to make a perfect classification of medicines according to their actions, when we remember the variety and differences in the action of any single specimen. Why should tartar-emetic be considered under three heads, as a cardiac sedative, as a mineral emetic, and again as a nauseating expectorant? Does this division aid the mind in acquiring or holding the facts in regard to the action of this drug, or is it any more convenient for reference? We hold decidedly not.

In the present edition we have new articles on coffee, tea, tobacco, arnica, eucalyptus, picric acid, lithium, oxalate of cerium, gelsemium, jaborandi, salicylic acid, cold, heat, and electricity. Several additions and corrections have been made to the old articles, in some particulars adding very much to their value. More attention has been paid to the dose and administration—the doses of so important drugs as tartar-emetic and prussic acid having been omitted in the previous edition. We are sorry to see that the dose and method of administration of Calabar bean are still wanting, both points of extreme interest in the practical therapeutics of the drug. Many individual articles are still open to criticism, and particularly is this true of the parts devoted to therapeutics. Rather too much has been sacrificed to the study of the physiological action, to the exclusion of many practical points. Again, several subjects are somewhat slighted, e. g., the article on bichloride of methylene is certainly shorter than the subject deserves.

It seems rather confirmatory of what we said regarding classification, that heat, cold, and electricity, must be brought under the head of forces; a new heading in our list of materia medica. The article on cold would have been more complete and useful, if it had contained fuller directions as to the practical application of this agent, such as the temperature of the baths, the time of their continuance, etc.

On the whole, Dr. Wood has accomplished his purpose very well. The theory of his book is certainly the correct one, and although he does not always succeed in showing, from the physiological action of a drug, just what diseases would be modified by it, yet this failure is simply from the insufficiency of our knowledge; for much time and patient investigation are necessary before a truly scientific treatise on this subject can be written. Still this book marks a new era in therapeutics, in which great things have been and still are to be accomplished. It is certainly a most valuable and interesting work, and we cannot but thank the author for the careful way in which he has brought together and sifted out this immense amount of material.

To experimenters and teachers of materia medica he has conferred a benefit which cannot be over-estimated. Any one who has tried to work up, from the journals and monographs, any subject connected with this branch, knows what a hopeless labor it seems, and must admire the patience and perseverance which has enabled Dr. Wood to accomplish his self-imposed task. In some points, however, he has, it seems to us, partially failed. He presumably addresses himself to the profession at large, including students, and not to experimenters and specialists. He has, however, shot rather over the heads of his audience: the amount of details of experiment and discussion of unsettled points cannot but tend to perplex and embarrass the average practitioner, without giving him any useful information. To the student, beginning the study of this (in student-minds always dry and uninteresting) subject, the book is hardly adapted. The difficulties would seem to him stupendous, and he would be disgusted and disheartened at the start, or be driven to content himself, as so many do, with some wretched student's manual, from which he can cram enough to serve him, by dint of hard squeezing, in the examination-room.

No! The proper text-book of materia medica for students is still to be written, and Dr. Wood, or some other equally competent man, could not employ himself better, or do a greater service to the rising generation of doctors, than by devoting himself to getting out such a work. What students want is a plain, straightforward style, all useless and unnecessary matter cut away as closely as possible, and the facts laid down in a concise and somewhat dictatorial manner. After mastering such a work, they could then take up Dr. Wood's book and read it with interest and profit. In conclusion, we must say that no one, who pretends to keep up with the advance of therapeutics, should fail to have a copy of this book on his table for reference, or, more properly, study.

ART. IV.—*A Treatise on Human Physiology for Students and Practitioners of Medicine.* By JOHN C. DALTON, M. D. Sixth edition, revised and enlarged. Philadelphia: Henry C. Lea, 1875.

WRITTEN by one who was the first to teach experimental physiology in an American medical college, and whose ability as a teacher and whose analytical skill in deduction from facts are familiar to us all, this handsome volume cannot properly be dismissed with a few sentences of praise. Justice to writer and reader alike requires that we shall not be biased by the high position of the author on the one hand, nor on the other by comparing his production with a standard disproportionate to its claims. The present work is not written for physiologists, but for medical students and practitioners. As in the last edition, he divides his subject into three sections: 1. Nutrition; 2. The Nervous System; 3. Reproduction. The first six chapters treat of the proximate principles, in describing which the new chemical notation is introduced, and, as it seems to us, somewhat prematurely, since it has not yet been universally adopted by the authors of chemical text-books within the ready reach of the student. On the whole, we think too much space relatively has been devoted to the chemistry of the body. The use of the term palmatine, in the place of our old friend margarine, may be mentioned as another innovation. After a chapter on food in which we find no allusion to the important ingredient alcohol, we come to physiology proper.

Eight new illustrations are added to the text which follows on digestion, including an excellent one taken from Bernard, showing the relations existing between the pancreas and duodenum. Deglutition is disposed of in five lines, although this rather important function is described more fully when the cranial nerves are taken up. We should have attributed the neglect of this function to the fact that the work was designed for medical students, and that it (deglutition) was deferred until reflex action had been explained, but the introduction of the spectrum analysis of the bile into Chapter X. forbids this interpretation. The appearance of the plates showing spectra of bile, Pettenkofer's test, etc., has been much improved since the publication of the author's paper on the subject.

After a full *exposé* of what is known about the glycogenic function of the liver, we have some excellent chapters on the blood, respiration, animal heat, the circulation, and the lymphatic system, Section I. being brought to a close by a separate chapter on the urine. Without wishing to discuss the advisability of placing absorption before the circulation, or of omitting under respiration and animal heat some points which we think are well established, we may remark that the absence of any allusion to the discovery of a new function of the liver by Dr. A. Flint, Jr., certainly a very important addition to our knowledge, seems like an error in taste, into which we are sure the author could only have fallen through undue haste in bringing his work to press. There appears to be no notice taken of the spleen in any portion of the work.

The talent of the author is perhaps best displayed in Section II., which is devoted to the nervous system. Any one, who has followed the progress which has been made in the physiology of nerves and muscles during the last decade even, cannot fail to appreciate the great amount of labor necessary to bring a work like this up to modern requirements. Large volumes have been written on the vaso-motor system alone, and the great activity which has been shown in this department in all countries has produced an amount of literature almost appalling to teachers and writers of text-books.

Dr. Dalton has done well to omit much that has been written on the nervous system. In general he has made a happy choice of topics and the whole is admirably well arranged. On page 399 we are told that "each organ and tissue of the body possesses, independently of the nervous system, certain characteristic properties or modes of activity, which may be called into operation by any appropriate stimulus or exciting cause," and the first example given to illustrate this idea is as follows: "If the heart of a frog, after its removal from the body, be touched with the point of a steel needle, it contracts and repeats very nearly the movement of an ordinary pulsation." How the stimulus is conveyed from the minute portion irritated by the needle-point, so as to occasion a contraction of the whole organ, without the aid of the nervous system, cannot be explained. We believe in muscular irritability, but know of no experiment which makes it a fact, although it is commonly received as such.

Chapters V. and VI., on the brain and cranial nerves, are especially to be commended. The reader will find a good *résumé* of the recent experiments on the functions of the cortex cerebri, the author having taken an active interest in the matter. Good plates have here been introduced, among which we may notice one showing a plan of the cerebral convolutions, page 472; horizontal section, page 476, and a beautiful one on page 538, from Henle, showing the nuclei and roots of the abducens and facial nerves. Fig. 177, of a case of facial paralysis, taken from a photograph, illustrates the function of this nerve better than any amount of text could have done. We confess some surprise to find but ten pages devoted to the sympathetic system ; and more, to learn that Bernard was the first to show that the arterioles of a rabbit's ear contract when the peripheral end of the cut sympathetic in the neck is galvanized. We have always supposed that there was no question as to the priority of publications on this point, and that to Brown-Séquard belongs at least a share in the honor.

The last chapter of this section embraces the physiology of the senses. Like everything else which the author writes, this chapter is very perspicuous, and, while it might disappoint the specialist, affords ample food for the general practitioner.

Section III., on reproduction, has not been altered since the last edition so much as Sections I. and II. Among the additions to this portion of the work may be mentioned Chapter VIII. on the formation of the embryo in the fowl's egg, which contains a good account of the development of the germinal membrane, accompanied by illustrations from His. We notice, as a decided improvement, that the names of medical writers have been omitted from the index.

Although this valuable acquisition to medical literature can but prove to students a rich storehouse of physiological data, we miss with regret a few important matters which have been utterly ignored, and a certain completeness which we naturally expected from so eminent a physiologist. The author has been, it seems to us, unwise in devoting so much space to physiological chemistry, at the expense of physics. As an example, he does not mention animal electricity. Now, every schoolboy needs to know of the existence of a science so great as this, if not of the existence of its discoverer Du Bois-Reymond. It is taught in some preparatory schools in Germany, and in a physiological text-book deserves at least honorable mention. We hope in the next edition that these remarks will meet with the most satisfactory of all responses, viz., the introduction into Section II. of something about electrophysics in its physiological relations, not omitting the simple facts of electrotonus.

ART. V.—*A Practical Treatise on Fractures and Dislocations.* By FRANK HASTINGS HAMILTON, A. M., M. D., LL. D., Surgeon to Bellevue Hospital, New York; Consulting Surgeon to the Hospital for Ruptured and Cripples, to the St. Elizabeth Hospital, ett.; Author of "A Treatise on Military Surgery and Hygiene," and of "A Treatise on the Principles and Practice of Surgery." Fifth edition, revised and improved; illustrated with Three Hundred and Forty-four Woodcuts. Philadelphia: H. C. Lea, 1875.

AN extended review of this standard work would now be superfluous; its contents and merits are already well known and fully appreciated by the profession. The present edition comes to us carefully revised, with the addition of many observations that have been made both by surgeons at home and abroad. This volume is largely illustrated by new woodcuts, and the number of its pages increased. No man has been more faithful and careful in his statements than Dr. Hamilton; and due credit has been given to all those who have been fellow-workers with him in this branch of our science. Loose statements are foreign to this book. We are told in a clear and conscientious manner just what the author believes we may expect to accomplish, with our present appliances, in each class of injuries. Upon the subject of treating fractures by means of immovable dressings, especially with plaster of Paris, Dr. Hamilton gives very clear and detailed directions. He is by no means among those who may be regarded as strong advocates of this mode of treatment. Indeed, in respect to fracture of the thigh, it certainly is not his favorite mode of dressing; here he decidedly gives preference to the weight and pulley, with the addition of his long lateral splint. Though evidently somewhat biased against plaster in many forms of fracture, we are glad to find him say, when speaking of the general treatment of fractures, that in those of the leg, whether simple or compound, when great care is exercised in the management of the case, the plaster dressing is in some respects superior to any other. While on the subject of fracture of the tibia and fibula he says: "I have of late seen the greatest advantage in this mode of dressing;

and it was in precisely these cases that I formerly believed the immovable apparatus most objectionable;" and, though not desiring to retract aught of what he has previously stated as regards its dangers, he says "he has not until lately fully appreciated to what a degree these dangers might be overcome by skill and attention."

That the author has spared no pains in carefully preparing this volume for the press is very evident, and that it will now, as hitherto, be received by the profession as the standard work upon this subject in the English language, we have not the slightest doubt.

ART. VI.—*The Movements and Innervation of the Iris.* By H. GRADLE, M. D., Chicago. Reprint from the *Chicago Journal of Nervous and Mental Disease*, April and July, 1875. Pp. 56.

THIS pamphlet is a study of the dependence of the movements of the iris on a variety of conditions of the system, and the importance—physiological and pathological—of their correct practical interpretation. The author has gone over the entire range of literature on this subject, and his paper represents an immense deal of research and study, for which he deserves much credit.

The important points in regard to the symptomatology of the pupil are formulated in the following conclusions:

1. The third nerve contracts the pupil, and serves as a centrifugal route for the impulses started by luminous impressions made on the optic nerve, each anterior tuberculum quadrigeminum acting as a centre for the opposite, and partly for the same side. The dilatation on the withdrawal of light is due to the elasticity of the iris.

2. The sympathetic nerve dilates the pupil by calling into activity the radiating muscular fibres. The reflex impulse for this dilatation originating in any sensory impression, passes from the centre in the medulla oblongata through the cilio-spinal region into the cervical sympathetic. The contraction on cessation of the influence of the sympathetic is also due to the elasticity of the iris.

3. The fifth nerve, on which the sensibility of the iris depends, also possesses pupillary fibres. The constricting fibres predominate in man and some animals, the dilating fibres in others. Reflex excitation of that nerve starts mainly from painful impressions made on the eye itself.

4. The ciliary ganglion receives, in man and most animals, the nerve-filaments supplying the iris; it is not yet proved that the pupillary fibres originate in this ganglion.

5. Numerous ganglionic cells are found in the iris, which communicate partly with the motor oculi and partly with the fifth nerve. On the former set depends, in part, the tonus of the sphincter. Their activity seems to constrict the pupil.

6. Atropine paralyzes the motor oculi and its ganglia, which parts, on the other hand, 7, are stimulated by Calabar bean. Internally this remedy will also contract the pupil by its central stimulation of the fifth nerve.

The paper is completed by a short study of the clinical evidence afforded by the pupil in support of these physiological conclusions.

Although issued in the modest form of a pamphlet, this work well deserves preservation in any one's library, and will serve as a reference to those who may desire to become familiar with the literature of the subject.

ART. VII.—*Tinnitus Aurium, or Noises in the Ear.* Second edition, with Cases. By LAWRENCE TURNBULL, Ph. G., M. D., etc. Reprinted from the *Philadelphia Medical Times*, June and October, 1874. Philadelphia: J. B. Lippincott & Co., 1875. Pp. 39.

Tinnitus Aurium: A Consideration of the Causes upon which it depends, and an Attempt to explain its Production in Accordance with Physical Principles. By SAMUEL THEOBALD, M. D., Surgeon to the Baltimore Charity Eye and Ear Dispensary. Reprinted from the "Transactions of the Medical and Chirurgical Faculty of Maryland," April, 1875. Baltimore: Innes & Co., 1875. Pp. 13.

THE first of these pamphlets is but a review of the different causes which may occasion tinnitus aurium. As subjective noises in the ears may be caused by a variety of diseases, the author might have found some more appropriate title for his pamphlet. We cannot agree with him that these noises "are not only a symptom of the diseased condition of the organ, but also a very troublesome form of disease in itself;" and therefore we fail to see the propriety of treating of the diagnosis, causes, pathology, and treatment of a mere symptom instead of the disease itself. A number of cases are detailed, in which tinnitus depended upon various causes.

The author of the other of these pamphlets advances a new theory to explain the production of tinnitus aurium. He thinks that tinnitus is invariably the expression of an *excitation of the terminal or percipient elements* of the auditory nerve, and that in almost all cases tinnitus aurium is to be attributed to the existence of *vibrations excited in the walls of the blood-vessels of the labyrinth by the friction attending the circulation of the blood*, which are capable of imparting to the labyrinthine fluid and thence to the terminal filaments of the auditory nerve impulses similar in character to those which are produced by the vibrations of the stapes, and hence, like them, capable of giving rise to the sensation of sound.

Art. VIII.—*A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State.* By William Leishman, M. D., Regius Professor of Midwifery in the University of Glasgow; Physician to the University Lying-in Hospital, etc., etc. Second American, from the second and revised English edition. With Additions by John S. Parry, M. D., Physician to the Philadelphia Hospital, etc. Philadelphia: Henry C. Lea, 1875.

So short a time has elapsed since we reviewed the first edition of this work that we do not deem an extended notice of the second edition necessary. We may say, however, that a fuller acquaintance with the book and a more careful examination of the author's method of treating his subject have led us to think more highly of the treatise, as a text-book, than we did on its first perusal, and warrant us in recommending it as perhaps the most useful one the student can procure. The errors which appeared in the first edition have been corrected, many important alterations have been made in the section on physiology, and the chapters on puerperal fever have been rewritten, "with a view of giving greater prominence to the doctrine of septicæmic infection." Some important additions have been made by the editor in order to adapt the work to the profession in this country, and some new illustrations have been introduced to represent the obstetrical instruments generally employed in American practice.

In its present form it is an exceedingly valuable work for both the student and practitioner.

Art. IX. — *Vision: Its Optical Defects and the Adaptation of Spectacles.* Embracing first, Physical Optics; second, Physiological Optics; third, Errors of Refraction and Defects of Accommodation, or Optical Defects of the Eye. With Seventy-four Illustrations on Wood, and Selections from the Test-types of Jaeger and Snellen. By C. S. Fenner, M. D. Pp. 299. Philadelphia: Lindsay & Blakiston, 1875.

This work is, as the author says, but a *résumé* of our present knowledge of physiological optics, and of the defects of the eye as an optical instrument. The division of the book is amply set forth in the above comprehensive title-page. The chapter on "Physical Optics" is short and meagre, and we are often at a loss to see what relation it has to the one which follows on "Physiological Optics." In fact, the arrangement of the book is about as bad as could well be conceived. More than one-half of the volume is taken up with the consideration of the errors of refraction and accommodation. With so many good books as we have on these subjects, especially Donders's "incomparable work," we cannot see what need there was for another. We hope, with the author, however, that the volume will give much useful information to the student, to the physician, and those of the general public who may desire to have their minds improved.

ART. X.—*The Physician's Diary for* 1876. Containing a Visiting List, Diary, and a Daily Memoranda, Obstetric and Vaccination Records, etc., etc. Published at the Office of the *Journal of Materia Medica*, New Lebanon, N. Y.

THIS diary is arranged on a convenient plan, and will be found well adapted to the necessities of the practitioner. It contains a very full list of the medicines manufactured by Tilden & Co., with the dose of each, and the method of reducing to the officinal standard strength.

BOOKS AND PAMPHLETS RECEIVED.—Malpractice. Responsibilities of Surgeons and Physicians. By Thad. M. Stevens, M. D., Indianapolis. Reprint from *Indiana Journal of Medicine* for February, 1875.

State Boards of Health. By Thad. M. Stevens, M. D., Indianapolis, Ind. From Transactions of the Indiana State Medical Society of 1875.

Transactions of the American Otological Society. Eighth Annual Meeting, Newport, R. I., July 21, 1875. Vol. ii., Part I. Boston: James Campbell.

Annual Report of the Surgeon-General, United States Army, 1875.

Manitou, Colorado, U. S. A. Its Mineral Waters and Climate. By S. Edwin Solly, Fellow of the Royal Medico-Chirurgical Society, Late Medical Registrar and House-Surgeon to St. Thomas's Hospital, etc. St. Louis, 1875.

Physiological Action of Lycoctonia. By Isaac Ott, M. D., Demonstrator of Physiology, University of Pennsylvania.

Transactions of the Kansas Medical Society at its Annual Session, held in Topeka, May 19 and 20, 1875. With the Constitution and By-Laws. Pp. 82.

Rapid and Automatic Filtration. With Description of Apparatus. By Thad. M. Stevens, M. D., Indianapolis, Ind.

Phosphorus: Its Claims as a Therapeutic Agent. By Wm. Mason Turner, B. Ph., M. D. Philadelphia, 1875.

Recent Investigations into the Physiological Functions of the Brain. By H. R. Bigelow, M. D., Hartford, Conn.

Dr. J. F. M. Gedding's Report on Bright's Disease, to the South Carolina State Medical Association. Pp. 136.

Our Teeth and their Preservation. By L. P. Meredith, M. D., D. D. S.

Are Carbolic Acid Disinfections useful in Yellow Fever? Read before the Board of Health of the State of Louisiana, October 2, 1875, and before a meeting of Physicians, October 6, 1875. By Dr. Y. R. Le Monnier, Lecturer on Pathological Anatomy and Histology, Charity Hospital Medical College, New Orleans, etc.

Electricity, as used in Parturition, Post-partum Hæmorrhage, and Resuscitation of New-born Infants. By Alexander Murray, M. D., etc. Reprinted from the *Psychological and Medico-Legal Journal*, June, 1875.

On the Uterine Souffle and the Fœtal Heart. By James Cuming, M. D., F. R. C. P., Edin., etc. Edinburgh: Oliver & Boyd.

Statistics of Births, Marriages, and Deaths, in the City of Philadelphia, for the Year 1874. Compiled by Wm. H. Ford, M. D., Secretary of Board of Health. Philadelphia, 1875.

Abortion: Its Causes and Treatment. By Walter Coles, M. D. St. Louis, 1875.

Memorials of Harvey, including a Letter and Autographs in fac-simile. Collected and edited by J. H. Aveling, M. D. London: J. & A. Churchill, 1875. Pp. 28.

Transactions of the Sixth Annual Session of the Medical Society of Virginia, held in Richmond, October 20, 21, and 22, 1875. With an Alphabetical List of Fellows. Published as an Appendix to the November issue of the *Virginia Medical Monthly.*

Ninth Annual Report of the Home for Incurables.

Lectures on Dermatology; delivered in the Royal College of Surgeons of England in 1874–1875. Including Struma; Lupus; Lymphadenoma; Xanthoma; Epithelioma; Ichthyosis; Scleriasis; Verruca; Clavus; Nævus; Spargosis; Molluscum; Cheloma; Prurigo. By Erasmus Wilson, F. R. S., F. R. C. S., etc. London: J. & A. Churchill, 1875.

Experimental Investigation of the Action of Medicines. By T. Lauder Brunton, M. D., F. R. S., etc., etc. Reprinted from the *British Medical Journal.* London: J. & A. Churchill, 1875. Pp. 90.

The Student's Guide to Human Osteology. By W. W. Wagstaffe, B. A., F. R. C. S., Assistant-Surgeon to and Lecturer on Anatomy at St. Thomas's Hospital. Philadelphia: Lindsay & Blakiston, 1875.

Reports on the Progress of Medicine.

SURGERY.

Chloral in Traumatic Tetanus.—Verneuil has for a long time insisted on the fact that trismus, which is generally considered the initial symptom of tetanus, is preceded in a large number of cases by a group of symptoms which should prepare the surgeon for more formidable phenomena. During the siege of Paris he was called to see patients with tetanus who were said to have been attacked only a few hours before; on questioning the patients, however, he elicited the fact that they had experienced shooting pains, transient convulsive shocks, or centripetal muscular spasms in the injured member, on the previous night or nights. According to Verneuil, the immediate and large administration of chloral averts the more formidable symptoms, and he recently presented to the Société de Chirurgie five cases cured in this manner and reported one of Richelot Fils who was cured in twelve days, having received sixteen grammes a day, and another of Lassègue, who had received twelve grammes in thirty hours, and was cured. Verneuil protests strongly against the argument of many surgeons that all those cases which have recovered after the administration of chloral would probably have got well without it; he advises that it should be given by the mouth, as when administered by the rectum it is slightly irritant and perhaps caustic. He is convinced that chloral can modify the course of the disease and change it from its acute into a chronic form. Though chloral cannot be considered a specific remedy, it is one of the most efficacious means for calming the spasms, and given in doses from eight to thirty grammes it allays all muscular contraction and especially those of the respiratory apparatus which in the last stages of tetanus determine the asphyxia of the patient. It should therefore be given immediately in doses of two to six grammes a day. Dr. Corillas, of Greece, has reported in the *Allgemeine Wiener Med. Zeitung*, copied in the *Lancet*, a case of tetanus in a man forty years old, who had received a wound in the left temple from the point of a cane; tetanus supervened and at first fifteen grains were given, which brought a sensible amelioration of the symptoms, but the attacks recurred with renewed force and the dose was increased until the patient took one hundred grains a day. The patient recovered after having taken six ounces of chloral in thirty days. He also reports another case in the practice of Dr. Basilin, that of a female forty years of age who was seized with tetanus after having sustained a wound in the finger from a splinter. Narcotics failing, chloral was given, the patient taking one hundred and five grammes in twenty days. In the *Dictionnaire Annuel* for 1873 is related the case of a young farmer who took two hundred and four grammes in one month, without the slightest harm.

E. F.

Resection of the Os Calcis. (*Gaz. Hebd.*, No. 33, 1875.)—Before the Société de Chirurgie, Paris, M. Rigaud read a paper on the entire resection of the os calcis which he first performed in 1844; up to 1873 he had performed this operation eleven times in cases where the bone was diseased in its totality, and, with the exception of one case which died from pyæmia, all the rest made successful recoveries; a twelfth case subsequently necessitated amputation of the leg. The author's operation is as follows: An horizontal incision, dividing the heel at the insertion of thetendo Achillis and passing one to two centimetres below the malleoli, extends forward to the level of the calcaneo-cuboid articulation and to a corresponding extent externally. This incision permits the detachment of a large plantar flap, the entire depth of the cellulo-fatty layer of this region being preserved; by hugging the inferior surface of the calcaneum and detaching the aponeurotic attachments of the plantar muscles, these also are preserved. The internal and external lateral ligaments are then cut, great care being taken that the tendons of the peronæi and flexor of the great-toe are not divided. The posterior tibial vessels and nerves must be preserved and especially the external plantar branch. The tendo Achillis is then divided at its insertion into the calcaneum. This bone is seized from behind forward with strong forceps, so as to facilitate, by the inclination given to it, the introduction of a strong bistoury between the articular surfaces. The calcaneo-astragaloid articulation is opened from behind and without, and the calcaneum is wrenched from the cuboid in a direction forward and outward, care being taken that the tendons are not cut. The plantar flap is adapted as exact as possible, and is retained by sutures and adhesive straps. The cicatrix being circular and situated several centimetres above the sole, it does not support the weight of the body at any part. The depth of the plantar layer remains intact and preserves the elasticity so necessary in walking. E. F.

On False Abscesses of Bone and Neuralgiform Osteitis which accompanies or simulates them. (*Gazette Méd. de Paris*, No. 41, 1875.)—This was the title of a paper read by M. Gosselin before the Académie de Médecine, October 5, 1875. From 1836 to 1846, Brodie published nine cases, in which he called attention to this form of osteitis in which the inflammation, after the disease has lasted a long time without necessary result in necrosis, finally terminates in suppuration and the formation of an interstitial abscess at variable depth without communication by sinus with the exterior. Since that time other cases have been published by various authors, among others by E. Cruveilhier, Broca, etc. According to Gosselin, the symptoms attributed by authors to this affection, especially the intense and rebellious pain which is said to accompany it always, are not characteristic. From the observation of six cases which have been under his care, and a critical analysis of other published cases, he draws the following conclusions: 1. Long bones which have undergone condensation from old inflammation may contain cavities which are not abscesses, and there may be neuralgic pains which are not caused by the presence of these cavities. 2. The neuralgic form of osteitis may be present without any accidental cavity, but then the bone is always found hypertrophied from old inflammation. 3. In these cases application of the trephine may be useful and is not attended by danger. E. F.

Resection of the Sciatic Nerve for Rebellious and Painful Ulcer of the Left Leg. (*Revue Méd. Chir. Thérap.*, No. 16, 1875.)—M. Verneuil, at the Hôpital la Pitié, had performed amputation of the left leg in a female twenty years of age, who had suffered for a long time from ulcers in the middle portion of the left calf, which were accompanied by intolerable neuralgic pains and had resisted all local and general therapeutic measures. The ulcers had a grayish base and were infundibuliform in shape; the suppuration was thin and fetid; and, although the bones were not denuded, the case might have been termed perforating ulcer of the calf, not only from its configuration, but also from its obstinate resistance to all therapeutic measures. After the operation, the case did well until the wound was about to cicatrize, when an ulceration identical to the preceding one appeared at the extremity of the stump, accompanied with intense neuralgia. As it would have been rather early to resort to amputation above the knee, and as Verneuil hoped that resection of the sciatic nerve would calm the nervous element and perhaps favor the cicatrization of the ulcer, the popliteal and peroneal nerves were resected to an extent of about two centimetres. Brown-Séquard, Charcot, and others, have shown that traumatic or other lesions of nerves can determine certain derangements of nutrition in the tissues which they supply; these derangements take place chiefly in the skin in the form of phlycteneæ, ulcerations, zona, etc. The above operation has shown that lesion of a nerve may prevent the cicatrization of ulcers. (In place of resection, Prof. Patrubau, of Vienna, has successfully employed stretching of the nerve in a case of sciatica, and Prof. Nussbaum has also stretched the branches of the brachial plexus by means of blunt crotchets.) E. F.

Strangulated Hernia; Reduction en masse, etc.—A unique case of the latter condition is reported in the *Gazette Médicale de Paris*, No. 23, 1875, by Dr. V. Poulet, of which the following is an abstract: J. B. S., a laborer, aged forty-five years, whose right testicle only had descended, sustained an inguinal hernia on his right side while in the military service, for the relief of which he wore a truss. One year ago, after exertion, a second hernia appeared on the left side, which latter, however, remained small, while the right equaled in size a hen's-egg. On the 23d of last March, having neglected to put on his truss, and being under the influence of liquor, the right hernia descended, and, while he made strong and irrational efforts to reduce it, it suddenly disappeared. The symptoms, however, instead of ameliorating, immediately intensified, and the pain became insupportable. Obstinate vomiting set in and all the signs of internal strangulation. An ounce and a half of Epsom salts were taken without effect. After the patient had passed a sleepless night, the author was called in the morning, and on examination could discover no hernia on either side. Introduction of the finger into the inguinal canal found the latter entirely free. The external ring was large and dilated. About three centimetres above Poupart's ligament was felt a roundish tumor, about the size of a small orange, which was tender on pressure and dull on percussion, contrasting with the resonance of the rest of the abdomen. This tumor was very hard and resistant, but the nature of its contents could not be recognized on account of the depth at which it was situated. The tongue was clean and moist; the bladder was much distended, and there was retention since the day before. The diagnosis was made of reduction *en bloc*, from the violent efforts by the patient at reduction. A catheter was immediately passed and a large quantity of urine evacuated. The patient was then ordered to cough, in order, if possible, to make the hernia protrude. As this could not be accomplished, an enema was ordered of six litres marsh-mallow infusion, which, though bringing away but little fæces, relieved the patient very much. Frictions of belladonna-ointment and a large bladder of ice were applied over the tumor, and the patient given ice and a cupful of black coffee every half-hour, which he was able to take. The patient passed a very good night, and in the morning could pass his water, but the constipation persisted and the local condition remained the same. The patient according to his own statement passed the next night easily, and on March 26th he felt so well that he smoked his pipe. The tumor had disappeared in the swelling of the surrounding parts which had taken place. The track of the cord was red and tumefied. Castor-oil was given by the mouth and rectum, and the ice applications were continued. There was nothing urgent, but the uncertainty of the final result caused anxiety. Time was being lost by the patient's obstinate refusal to have an operation performed. During the night following the 26th the vomiting became incessant; it was yellow and pultaceous, and the patient recognized the stercoraceous odor in it. The pains were intense and there was meteorism. Immediate operation was proposed, but the patient obstinately refused until conquered by the severity of his sufferings. About 7 P. M. on the 27th, a fold of skin perpendicular to the long diameter of the tumor was incised obliquely upward and outward, extending from the external ring up to beyond the superior level of the tumor to an extent of about eleven centimetres. After dissecting the cellulo-fatty tissue, the aponeurosis of the external oblique presented, which was divided on the director, and then a crucial incision of the wound was made to facilitate dissection. The internal oblique and transversalis were divided. A large number of cellulo-fibrous layers were then encountered, among which it was impossible to recognize the fascia transversalis;

these were carefully divided on a director in succession. One membrane yet remained, and this was livid red, rugous, and as if covered with villosities. The suspicion that this might be the intestine changed by inflammation was dispelled by the fact that, when the finger was passed around the tumor, it did not pass easily into the interior of the sac, and, above all, did not reach the constriction at the ring. It was concluded that this was the sac, and it was elevated with much difficulty, as it was in close contact with the intestine, no effusion intervening. It was partially incised and the intestine appeared; but, when the author's assistant sought to enlarge the opening with the finger, an intestinal perforation was produced and a large quantity of gas and fecal matter escaped. As the intestine had undergone mortification, it was left unreduced after a ligature had been placed around the perforation. On carefully turning aside the strangulated viscera to find the constriction, at first nothing was found which resembled the neck of the sac; it was only when the index-finger was passed to a great depth, as far as it could reach, that a sharp and very small internal ring was found. After several unsuccessful attempts, a long and slender knife was passed beneath it and the division made upward and outward. The only dressing consisted in a large moist sponge, which was renewed every hour. Slight vomiting continued. Pulse, 96; some fever and perspiration. An opium-potion was given; the patient passed a quiet night and felt himself well on the 28th. The abdomen was supple and flat after evacuation of an enormous quantity of fecal matter and numerous lumbrici. Digestion easy. During the following days the general condition steadily improved; the appetite became very strong, as is usual in cases of artificial anus, and the patient was soon able to get up. The fecal matters were very consistent, proving that the hernia was located at the lower portion of the small intestine. Wind passed every day by the anus, which is regarded as a sign of favorable import. Laxative enemata brought away few excrementitious matters of gray color, which contrasted with the fluidity and yellow color of the matters discharged by the fistula. On April 4th the entire constricted coil mortified and detached itself, leaving a granulating wound infundibuliform in shape, at the apex of which the artificial anus was so contracted as barely to admit the finger. On April 9th the patient was seized with a pneumonia on the right side, which proved fatal on the 16th, three weeks after the operation. No autopsy was permitted. The result of this case showed that, if the operation had been performed on the second day, the chances of success would have been infinitely greater; as it was, five days intervened between the occurrence and the operation, thus giving the intestine ample time to undergo mortification. Most authors advise that the operation should be performed as soon as the fecal matters acquire a fecal odor, for then the intestine is said to have become gangrenous. But cases of gangrene occur where there is no vomiting, and, when the operation is at length performed, perforation and perhaps intra-peritoneal effusion takes place. In the above case it was not necessary, contrary to the opinion of authors, to open the abdominal cavity before reaching the hernia: when the sac was opened, a tense and slender aponeurotic internal ring was found at a great depth. The author thus explains this reduction *en masse:* "As the ring did not yield to dilatation, and as the efforts at taxis were multiplied in proportion to the resistance, the violence caused a detachment to a certain extent of the fascia transversalis. The peritonæum lining it was driven before it, and finally the hernia was lodged in the abdominal cavity, in the iliac fossa, between the transversalis muscle and transversalis fascia. This condition of things is the only one of the kind on record. The surgeon is often embarrassed in regard to the presence or absence of gangrene. When it is well marked the diagnosis is easy; but in this case the intestine was livid red, and nothing indicated that there was total and inevitable sphacelus. Unless the perforation had taken place spontaneously, I believe I would not have hesitated to reduce it. The advice of Velpeau, therefore, to place a ligature around the perforation and to reduce the intestine, should not be followed in all cases. The great depth of the orifice of the stercoraceous fistula would have constituted an eminently favorable circumstance toward the final obliteration of the artificial anus. It is further remarkable that the patient died without any peritonitis or other abdominal complication."

Dr. Azam, in a paper read before the Académie de Médecine, April 6, 1875 (*Gazette Médicale*, No. 15, 1875), on "A Cause of the Persistence of Strangulated Hernia after Reduction," states that the surgeon in his efforts to reduce the hernia and exerting pressure inward may detach the peritonæum and thus cause internal strangulation. This accident is mortal, as it is unperceived and not of such a nature as to suggest the necessity for operation. The danger of this accident is avoided by exerting taxis in the direction of the canal, namely, upward and outward. S. B. W.

OBSTETRICS.

The Use of the Actual Cautery in the Enucleation of Fibroid Tumors of the Uterus. [*Lancet*, October 30, 1875.]

At a meeting of the Royal Medical and Chirurgical Society held October 26th, Dr. Greenhalgh read a paper on the above subject. He first alluded to the infrequent use of the actual cautery as compared with its application on the Continent, and passed on to enumerate the cases in which, for the last twelve years, he had used it with more or less success. These cases include chronic enlargements, with induration of the cervix uteri, due to inflammatory or fibroid diseases; epithelioma and cancer of the neck of the uterus where the organ is movable; some cases of vascular tumor of the meatus urinarius; slight cases of recto- and vesico-vaginal fistula; in incontinence of urine due to dilated urethral canal, and in certain cases of interstitial and intra-uterine fibroid growths. It was to its use in the two latter classes of cases that he limited his present observations. Full notes of a series of five cases in which this operation was performed were then given. The following is a brief outline of this part of the paper:

Case I.—Forty-three years of age, married thirteen years, with six children; came under treatment for retention of urine in 1866. For three years there had been much vaginal discharge, and, latterly, menorrhagia. Examination showed a large elastic growth from the posterior wall and fundus of the uterus, reaching to within an inch of the umbilicus, and in the pelvis compressing the rectum. A trocar was introduced into the mass in the vagina, which was followed by jetting of arterial blood, only checked by means of the actual cautery. A profuse serous discharge followed, and four days later the cautery was again applied, and by degrees the tumor shelled out from its capsule through the aperture thus made. The tumor was of the size of the fœtal head at term.

Case II.—Forty-seven years of age, married twelve years, never pregnant. Came under treatment for difficulty in micturition and defecation. A large tumor, flattening the rectum, filled up the pelvis. It was opened in the most dependent part by the actual cautery. Death occurred from peritonitis, due to perforation of the intestine, and the tumor was found to have contracted adhesions with the cæcum and rectum, and to be ulcerating into these cavities.

Case III.—Thirty-eight years of age, married thirteen years, four miscarriages; a large tumor from the posterior lip of the os uteri obstructed labor. The growth was treated by the actual cautery. The tumor gradually enucleated, and the patient made a good recovery.

With reference to this case, Dr. Greenhalgh read a letter received from Mr. Marriott, of Leicester, stating that last month the patient was delivered safely of a full-grown child at term. Before the operation was undertaken, the posterior lip of the uterus used to enlarge during pregnancy, and on the last occasion premature labor had to be induced.

Case IV.—Aged forty-seven, married, never pregnant; suffered much from hæmorrhage, constipation, and difficult micturition. A large tumor occupied the hypogastric region; the os uteri was stretched over the growth. The cautery was used in all four times, and the tumor removed piecemeal, gradually disintegrating. The patient recovered.

Case V.—Aged thirty; came under treatment in August, 1874; had suffered from floodings since January. An enormous fibroid tumor occupied a large part of the abdomen, and below it projected into the vagina from the posterior lip of the uterus. The case was under treatment for several months. The cautery was frequently applied, and the mass gradually disintegrated. There was much putrid discharge, and constitutional disturbance. The patient died in February, 1875, from embolism, after the growth had been apparently in great part, if not wholly, removed. The tumor weighed in all seven pounds one ounce.

Thus of these five cases three were intra-mural, one intra-uterine, and one extra-mural.

The author expressed an opinion that diffused fibroid deposits of the uterus in the early stage were more amenable to treatment than was generally supposed. Further, there were cases in which through the large losses of blood to which they gave rise, or the mechanical effects they produced, surgical interference was demanded. Dilatation or enucleation by the knife was sometimes employed, but this had been followed by ill effects, while the advantages of the actual cautery might be summed up as affording facility of application, causing but little pain, being rapid in its action, giving rise to no bleeding, and therefore obviating plugging; in the charred opening being unfavorable to absorption; in there being no offensive discharge from the charred surface; in the ready dilatation of the opening without bleeding; in permitting of manipulation through the opening immediately after its use.

Lastly, by the use of the cautery, portions of the tumor may be rapidly destroyed, its size reduced, and its lower segments rendered conical, thereby facilitating dilatation of the opening, and the subsequent detachment, expulsion, or removal of the morbid growth. Spontaneous expulsive efforts shortly followed its use, and the density of the tumor appeared to be more or less reduced.

In conclusion, the author drew especial attention to the three following points:

1. The advisability of the gradual detachment of the growth from its surrounding capsule, especially in cases where the tumor is of large size or where the patient has been much reduced by previous hæmorrhage, by which further losses of blood are avoided and more perfect contraction of the investing tissues is secured, and the chance of pent-up offensive discharge is almost certainly prevented.

2. The removal of only so much of the tumor at each operation as is

external to the opening, by which the opening is kept dilated, and all chance of its closure upon the remainder of the growth avoided.

3. The speedy destruction by the cautery or removal by the *écraseur* or hand of the tumor, should sloughing ensue.

Dr. Meadows, while acknowledging that the method proposed was a valuable addition to the modes of treatment of fibroid tumors, pointed out the difficulties arising from its application owing to the variable amount of union between such tumors and the uterine wall, for whereas some were distinctly encapsuled, and could be enucleated with ease, others were intimately blended with the muscular fibres. It was difficult in practice to distinguish these cases. Then the cases in which the operation was applicable were those in which the tumor was strictly intra-mural, so that the uterine tissue might aid in the process of enucleation. This or any other operative measure was contraindicated if the growth were close to the peritoneal or mucous surface. The difficulty in diagnosing the exact site of the growth was then a great hinderance to operative measures. The cautery was no doubt preferable to the knife, but as it frequently required the introduction of the finger to break down the attachments of the tumor, another element was introduced. The cautery *alone* would be almost free from danger.

Dr. Barnes concurred with Dr. Meadows in the difficulty of diagnosis of the exact nature and site of many fibroid tumors. Those springing from the cervix might fairly be treated by this method; but there was great risk in dealing with those arising from the fundus. One danger he especially insisted on was the tendency which these growths showed—after operations had been practised on them—to undergo a process of low necrotic inflammation, terminating in septicæmia; a course of events followed in one of Dr. Greenhalgh's cases. The actual cautery could not guard against this result, and he almost doubted if it were perfectly secure against the supervention of hæmorrhage. He was not then at all prepared to accept the use of the cautery, which much resembled the "gouging" process; and it could only be reserved for extreme cases.

Dr. Greenhalgh, in reply, pointed out that in his cases the cervix was involved in the growth. He would reserve the cautery for suitable cases, and would not employ it in sub-peritoneal tumors. He alluded to the soft, semi-fluctuating character of some of the tumors, and the escape of serum that followed. If operative measures be undertaken, the cautery was the best means, for even dilatation was dangerous. Moreover, by the use of the cautery there was no interference with the cavity of the uterus, e. g., Case III.

Rupture of Ovarian Cysts into the Peritoneal Cavity.—Nepveu (*Annales de Gynécologie*, tome iv., Juillet, 1875; quoted in *Centralbl. für Chirurg.*, No. 45, 1875) has collected one hundred and fifty-five cases of rupture of ovarian cysts. In one hundred and twenty-eight cases the contents were discharged into the peritonæum, in eleven cases into the intestinal canal, in six into the bladder, in one into the uterus, in two into the vagina, and in seven cases through the abdominal walls. The causes of rupture are either traumatic influences, or pathological changes in the cyst-walls. Among the former are blows and falls, emetics, fits of laughing or coughing, muscular exertions, as in stooping (especially during pregnancy), and surgical manipulations. The latter are changes of inflammatory character, with softening of the tissues of the wall, or degeneration into carcinoma. Rupture into the cavity of the peritonæum is attended with well-defined symptoms: severe pain with signs of collapse (and even convulsions); change in the appearance of the abdomen, disappearance of the tumor, with sense of fluctuation over the soft and yielding parietes. As a rule, rapidly-fatal peritonitis ensues, but a circumscribed inflammation may occur at first, and gradually become general. The rupture may even pass unnoticed. Of one hundred and twenty-seven cases, sixty-three were fatal, of which six died at once, eight within twelve days, and eight within four days. Of one-half of the sixty-four remaining cases, more or less complete healing of the cyst is recorded; and, in several instances, reaccumulation of fluid, and even a second and third rupture, occurred. But little attention has been paid to the pathological anatomy of the cysts which rupture. All varieties are liable to it. As a rule, there is but one point of rupture, which is at the upper and posterior part of the cyst; but there may be several, and even as many as thirty have been seen. Of one hundred and twenty-seven cases, only forty-three cases of *bona-fide* recovery are recorded. Severer symptoms follow rupture of cysts containing blood, pus, or foreign bodies, than those containing only serum.

The best plan of treatment is, in the author's opinion, not yet definitely determined. Hitherto, immediate abdominal puncture and ovariotomy have been resorted to. Consideration should be given to the character of the fluid obtained by exploratory puncture.

W. T. B.

Miscellany.

International Medical Congress.—We have received from Dr. William Goodell, Corresponding Secretary of the International Medical Congress, to be held in Philadelphia during the Centennial celebration, a circular setting forth the plan and organization of the proposed Congress, as determined on by the medical societies of Philadelphia. The following officers have been chosen: President, Samuel D. Gross, M. D., LL. D.; Vice-Presidents, W. S. W. Ruschenberger, M. D., U. S. N., and Alfred Stillé, M. D.; Recording Secretary, William B. Atkinson, M. D.; American Corresponding Secretaries, Daniel G. Brinton, M. D., and William Goodell, M. D.; Foreign Corresponding Secretaries, Richard J. Dunglison, M. D., and R. M. Bertolet, M. D.; Treasurer, Caspar Wistar, M. D. Arrangements have been made for holding the Congress from the 4th to the 9th of September, 1876. The morning sessions are to be devoted to general business and the reading of discourses, and the afternoon sessions to the meetings of sections, of which there are to be nine, as follows: 1. Medicine, including Pathology, Pathological Anatomy, and Therapeutics. 2. Biology, including Anatomy, Histology, Physiology, and Microscopy.

3. Surgery. 4. Dermatology and Syphilology. 5. Obstetrics and Diseases of Women and Children. 6. Chemistry, Toxicology, and Medical Jurisprudence. 7. Sanitary Science, including Hygiene and Medical Statistics. 8. Ophthalmology and Otology. 9. Mental Diseases.

Invitations have been sent to prominent medical gentlemen in all parts of the world, and the occasion will doubtless be one of great interest to the profession.

In the list of executive committees for the different States we notice the names of Drs. Stephen Smith and A. C. Post, of this city, and Dr. J. C. Hutchinson, of Brooklyn. It is sincerely to be hoped that the gentlemen having the matter in charge will receive the hearty coöperation of the profession throughout the entire country.

Appointments, Honors, etc.—Dr. William Pepper, of Philadelphia, has been appointed Medical Director of the Centennial Exhibition, and will superintend the hygiene of the establishment, and organize a medical corps to afford relief in accidents or emergencies. Profs. D. Hayes Agnew and John Neill have been elected Attending Surgeons, and Drs. J. L. Ludlow, Joseph G. Richardson, and James V. Patterson Attending Physicians, to the Presbyterian Hospital of Philadelphia. Dr. D. Clark, of Princeton, Ontario, has been appointed Superintendent of the Toronto Lunatic Asylum.

Dr. Lombe Atthill, was, on November 20, 1875, elected President of the Dublin Obstetrical Society for the ensuing year. Mr. William Colles, of Dublin, has been appointed Surgeon-in-ordinary to the Queen in Ireland. Dr. Gussenbauer, Prof. Billroth's clinical assistant at Vienna, has been elected Professor of Surgery in the Belgian University of Liége. Prof. Schwann, of Liége, has been elected a Foreign Corresponding Member of the French Académie de Médecine.

Translations.—Beginning with the present number a change will be made in the title of matter that has hitherto appeared under the head of "Translations." This matter is not only translated from the original journals, but is condensed and rearranged with special regard to the wants of our readers, who thus obtain in brief abstracts the essential points of long papers, which even if accessible would seldom be read in full. These abstracts will hereafter appear under the head of "Progress of Medicine," the names or initials of the gentlemen preparing them being appended to each item. We shall thus be enabled, from the smaller type used, to furnish a much larger amount of recent material than formerly, and a special effort will be made to supply digests of everything that is new or interesting in the medical world. Among those who will contribute to this department, and to whom we are already indebted for their labors in the past, we may mention Drs. Samuel B. Ward, George R. Cutter, Edward Frankel, George R. Lefferts, and William T. Bull.

American Otological Society.—At the last meeting of this Society, held in Newport, R. I., July 21, 1875, it was resolved by vote that the Committee on International Congress be empowered by this Society to issue a call for an International Otological Congress, at such time and place as they should see fit.

In accordance with this resolution, the committee have called a Congress to be held in New York City, on Friday, September 15, 1876, at 10 A. M., the place of the meeting to be announced later. Members of the medical profession who take an active interest in aural surgery are cordially invited to be present and take part in the Congress.

D. B. St. J. Roosa,
Clarence J. Blake,
Hermann Knapp,
J. Orne Green.

New York Society for the Relief of Widows and Orphans of Medical Men.—The Twenty-third Annual Meeting of this Society was held at the rooms of the New York Academy of Medicine, No. 12 West Thirty-first Street, November 24, 1875, at 8 P. M.

The following-named officers were elected: President, Dr. John R. Van Kleek; Vice-Presidents, Dr. Jas. Lenox Banks, Dr. Samuel T. Hubbard, Dr. Isaac E. Taylor; Treasurer, Dr. Jas. W. G. Clements; Managers for a term of three years: Drs. Jared Linsly, Gouverneur M. Smith, Samuel S. Purple, Thomas F. Cock, Joel Foster, Edward L. Beadle, and James O. Smith.

The permanent fund of the Society amounts to $107,032.-87. The Society extends semi-annual aid to seven widows and five children of deceased members.

The Journal of Nervous and Mental Disease.—This in future will be the title of what has hitherto been the *Chicago Journal of Nervous and Mental Disease* (quarterly), edited by Drs. J. S. Jewell and H. M. Bannister. Hereafter it will be published simultaneously in New York and Chicago, G. P. Putnam's Sons having taking charge of it in this city. The editorial coöperation has been secured of Dr. W. A. Hammond, of this city, Dr. S. Weir Mitchell, of Philadelphia, and Dr. E. H. Clarke, of Boston. All the departments of the journal are to be enlarged, and each number will contain from 160 to 200 pages. The price will be increased to five dollars per annum.

Poisoning by Carbolic Acid.—The *Medical Times and Gazette* of November 27, 1875, contains a report of a case of poisoning in which the patient, a woman forty years of age, swallowed nearly a teacupful, or about four ounces, of crude carbolic acid. Twenty minutes afterward the stomach was thoroughly washed out, and a pint of olive-oil thrown into it. There was much prostration, but under stimulants, milk, ice, etc., the patient gradually recovered, and was discharged from the hospital about a month after the accident.

Results of Antiseptic Treatment.—Bardelehen (*Centralblatt für Chirurg.*, 47, 1875) reports 387 important surgical cases treated antiseptically during the last three years, at the Berlin Charité Hospital. Of 134 cases of large abscesses, 56 cases of severe cellulitis, 76 major amputations, 21 resections of large joints, 23 operations for the removal of large tumors, and 77 of complicated fractures, not one died of pyæmia or septicæmia. Erysipelas occurred frequently, but its course seemed a mitigated one.

Bogus Diplomas.—General Schenck, our American minister in London, has done the medical profession good service by publishing a warning on the subject of bogus diplomas, for which there seems to be a brisk demand in England. It has been usual to issue them in the name of some imaginary school in the United States, and it is well for the public abroad to have an authoritative statement that certain universities and colleges have no existence.

Homœopathy in France.—At a recent meeting of the Medical Society of the Department of Calvados, the question of meeting homœopathic practitioners in consultation was the subject of a report, which concludes as follows: "Any practioner calling himself a homœopath, or practising in that capacity, is to be considered as performing an act of charlatanism; and, consequently, any member of this Society should refuse to meet him."

Journalistic Notes.—We have received a number of the *Scientific Monthly*, a magazine devoted to the natural sciences. It is edited and published by E. H. Fitch, in Toledo, Ohio. The *New Jersey Pharmaceutical Record* is the title of a new journal of "pharmacy, medicine, science, and literature," edited by W. H. Gilder, Newark, N. J. The *Peninsular Journal of Medicine*, of Detroit, is increased, beginning with the January number, to seventy-two pages.

The Medical Examiner.—Under this title a new weekly medical journal is to be issued in London on the first Friday in the present month, under the editorship of Dr. J. Milner Fothergill. An able staff of writers has been secured, and arrangements have been completed for the issue of a first-class journal. The high reputation of the editor will insure it a favorable reception.

University of California.—The commencement exercises the third session of the Medical Department of this university were held November 3, 1874. The degree of Doctor in Medicine was conferred on fifteen gentlemen. The valedictory address on the part of the Faculty was delivered by Prof. R. Beverly Cole; that on the part of the graduates by Mr. Alson Dawson.

Death from Chloroform.—The *Lancet* of October 9, 1875, records the death during the previous week, in St. Thomas's Hospital, of a man to whom chloroform was administered in order to relieve the pain consequent on the readjustment of bandages on a dislocated arm. Death occurred during the inhalation of the anæsthetic.

Cinchona Cultivation in India.—We learn from the *Indian Medical Gazette* of September 1, 1875, that the total number of plants in the cinchona plantations, in British Sikkim, is now 2,765,000. The cultivation of the *Cinchona succirubra* and of some other varieties has proved a brilliant success, but thus far that of the *Cinchona calisaya* has been a failure.

The English Metropolitan and Provincial Medical Schools.—The annual returns show a decrease in the number of students attending the provincial schools in 1875, the total number being 398, against 453 in 1874. The attendance at the metropolitan schools in 1874 was 1,745, and in 1875 it was 1,769.

Railway Accidents in Prussia.—According to the official report of the Berlin Statistical Bureau, there were in Prussia, during the year 1874, 1,779 cases of railway accidents, of which 627 proved fatal.

The New Rush Medical College.—The corner-stone of the new college-building, in Chicago, was laid with imposing masonic ceremonies November 20th. Prof. J. A. Allen delivered an able and appropriate address on the occasion.

Report on Laryngology.—We regret that for want of space we are obliged to omit Dr. Lefferts's quarterly report on laryngology. It will appear in the February number.

The Male Urethra.—Sir Henry Thompson, in a lecture delivered November 15th (*Lancet*, November 27th) says of the urethra:

First, let me assure you that the urethra is not a tube at all, in any sense in which we employ that word. It is not like a gaspipe, or an India-rubber tube, or even a flaccid tube of any membrane whatever.

It is rather *a continuous closed valve, capable of transmitting fluids and solids in one direction only, and transmitting nothing whatever in the opposite direction, except in obedience to applied force.* Its length in the male makes us think of it as a tube, but this is a mere accident of sex. An inch or less is amply long enough for its urinary function, as in the female; and all the length it possesses above that is quite useless as a *urethra*, and renders it liable to disease and accident—the price, and a heavy one, let me tell you, which the male pays for his specially distinguishing feature. In illustration of this, I have but to refer you to the innumerable difficulties and dangers associated with stricture, retention of urine, and calculus, which are almost unknown in the other sex. It is, then, in the male, simply a long valvular chink, traversing soft and most delicate vascular and nervous tissues, always firmly closed, and never opening except for a few seconds, during which fluids have to be transmitted from the body. Then, for a few seconds, it is distended more or less, and becomes a tube if you please, for this short time and this only, equaling, perhaps, at most, three minutes in the twenty-four hours. All the rest of the time it is firmly closed, and not one drop of fluid can pass from the bladder. Of course, oozing of liquid which is generated in the walls of the tube, or which enters it by ducts, may escape, but always, inevitably, in the outward direction only.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from November 14 *to December* 13, 1875.

Swift, E., Surgeon.—Assigned to duty as Medical Director, Department of the Gulf. S. O. 238, A. G. O., November 27, 1875.

STERNBERG, G. M., Surgeon.—Promoted Surgeon to date from December 1, 1875, *vice* Peters, retired.

HUBBARD, V. B., Assistant Surgeon.—Relieved from duty in Department of the Gulf, to proceed to New York City, and, upon arrival, report by letter to the Surgeon-General. S. O. 238, C. S., A. G. O.

HEIZMANN, C. L., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Wood, N. Y. Harbor. S. O. 229, Military Division of the Atlantic, November 15, 1875.

WHITE, R. H., Assistant Surgeon.—Assigned to duty as Attending Surgeon at these headquarters, San Antonio. S. O. 225, Department of Texas, November 29, 1875.

YEOMANS, A. A., Assistant Surgeon.—Upon arrival in Department of Texas, assigned to duty at Fort Richardson, Texas. S. O. 231, December 8, 1875.

KING, J. H. T., Assistant Surgeon.—S. O. 226, C. S., A. G. O., assigning him to duty in Department of Texas, is revoked. S. O. 238, C. S., A. G. O.

HALL, J. D., Assistant Surgeon.—Assigned to duty at Fort Independence, Boston Harbor. S. O. 229, C. S., Military Division of the Atlantic.

HARVEY, P. F., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Wayne, Detroit, Mich. S. O. 229, C. S., Military Division of the Atlantic.

COWDREY, S. G., Assistant Surgeon.—Upon arrival at Fort Barrancas, to repair to New Orleans, and report in person at these headquarters. S. O. 217, Department of the Gulf, November 26, 1875.

TORNEY, G. H., Assistant Surgeon.—Upon arrival at Key West, to proceed on same steamer to Fort Barrancas, and thence to New Orleans, reporting in person at these headquarters. S. O. 217, C. S., Department of the Gulf.

TAYLOR, M. E., Assistant Surgeon.—Assigned to duty at Colfax, La. S. O. 217, C. S., Department of the Gulf.

GARDINER, J. DE B. W., Assistant Surgeon.—To report by letter to the commanding officer, Department of Arizona, for assignment to duty. S. O. 230, A. G. O., November 15, 1875.

Peters, De Witt C., Surgeon.—Retired from active service, to date from December 1, 1875. S. O. 247, A. G. O., December 6, 1875.

Wilson, A. D., Assistant Surgeon.—Died at Camp McDowell, Arizona Ty., on November 30, 1875.

Obituary.

Dr. Octavius Yates, for many years a leading practitioner in Kingston, Canada, and highly respected by all classes of the community, died in that city November 10, 1875, aged fifty-one years.

Prof. James H. Armsby, M. D., of Albany, died suddenly, December 3d, of pulmonary apoplexy. He was born in Sutton, Worcester County, Mass., December 31, 1809. In 1830 he entered the office of the late Prof. March, of Albany, and 1832 was made the Resident Physician of the Cholera Hospital, and made the first autopsy in that institution. While yet a student he conceived the idea of the establishment of a hospital and medical college in Albany, and so successfully devoted his future energies in that direction, that they both became, principally through his instrumentality, accomplished facts. He graduated in medicine at the Vermont Academy of Medicine in 1833, after which, in connection with his preceptor, he established a private medical school, which school was continued until the foundation of the medical college in which he took so active a part. In 1861 he was appointed U. S. consul at Naples, a position which he creditably filled. While there he delivered popular scientific lectures, a practice which he continued with marked success after his return home. He received the honorary degree of A. M. from the Rochester University in 1836, and from Rutgers College in 1841. From the foundation of the Albany Medical College until his death he was actively engaged as a teacher of anatomy and clinical surgery. In both these departments he was signally successful, and the institution which he so long and so faithfully served will miss his disinterested zeal in its welfare and his wise counsels in its management.—*Medical Record.*

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Original Communications.

ART. I.—*Recto-Urethral Fistula.* By EDWARD J. BERMINGHAM, M. D., Surgeon to the Central Dispensary, New York.

URINARY and fecal fistulæ have long been subjects of the utmost interest to surgeons, and numerous monographs have been devoted to their consideration, and the discussion of the best mode of treatment. Strange to say, however, there is one variety of fistula, partaking of the character of both the urinary and fecal, which seems to have almost entirely escaped notice, even of those who have made a special study of this department of surgery. The few authors who mention it seem to think a passing notice quite sufficient, and therefore devote but a very few lines to this all-important malady. Reference is not here made to recto-vesical fistula, which has received its just share of attention, but to *recto-urethral*, which may be defined to be a communication between the bowel and urethra in any part of its course, which has no connection whatever with the bladder. A case of this kind has recently come under observation, in which the treatment adopted proved successful. It is as follows:

G. B., aged twenty-four years, brakeman, single, presented himself July 21, 1875, with the following history: About six weeks ago he contracted a "clap," for which he used an injection prescribed by a druggist, but which seemed to have very little influence upon the disease, as the inflammatory symptoms did not begin to subside until about four weeks ago. He continued to use the injection, although each time it gave him considerable smarting, and about ten days ago noticed a dull pain in the perinæum, which rapidly increased, and the parts became so tender in a couple of days that he was obliged to take to his bed. At this time (one week ago) he was in Philadelphia; his bowels were constipated, and he could pass water at first only with great difficulty, and finally not at all. A physician was called in, but the attempt to pass the catheter caused so much pain that the patient fainted. After recovery he felt greatly relieved, and was told by the doctor that his water had been drawn off through the catheter. He slept well during the night. The next morning he noticed a profuse yellowish discharge from the urethra, and had stinging pain in the perinæum when passing water. Bowels moved twice in consequence of a dose of castor-oil taken the night previous. Felt better and came to New York on the 18th. On the 21st, his bowels not having moved since the 17th, and experiencing much pain in the perinæum, which was greatly aggravated upon moving or passing water, he took two blue-pills, and resumed the injection as before, as he thought the "clap had come back." Bowels moved freely yesterday, and he noticed for the first time that some fæces came through the urethra when he made water. Same this morning.

An examination of the urethra revealed no stricture; 27 F. sound passes into the bladder, but causes great pain when passing the prostate. Tenderness in perinæum and in rectum over prostate, which is somewhat enlarged. Sphincter ani hypertrophied, and considerable spasmodic contraction. No solution of continuity of rectum discoverable by finger. Ordered complete rest, opiate suppositories, quinine and iron internally, and the urine to be drawn two or three times daily by the catheter.

July 30th.—The above treatment has been pursued for the past week, but with no beneficial result. Fæces still pass through the urethra. The urine, if allowed to pass, does so through the urethra, as nearly as can be ascertained. The rectum was cleared by an enema, and an examination of it made by the Bodenhamer speculum, which revealed an opening about an inch from the sphincter, into which a probe could be readily passed. Treatment continued.

August 9th.—No improvement. To-day an enema was administered, and, after anæsthetizing the patient, the sphincter ani was ruptured. The speculum was now introduced, and a silver probe coated with fused nitrate of silver passed into the sinus until it touched a sound that had been introduced through the urethra into the bladder. Ordered perfect rest in the recumbent position, and opiate suppositories, in connection with quinine and iron, which the patient has been taking from the first.

13th.—No fæces or urine has passed through sinus. After an enema the nitrate of silver was again applied through the rectal opening of the sinus to the depth of about half an inch, in order to prevent the orifice from closing before the deeper portions should be healed. Opium continued.

16th.—Digital examination made after administration of enema revealed the prostate to be much less painful upon pressure. The nitrate of silver was again applied to the rectal opening through the speculum. Opium continued.

21st.—Bowels moved by pil. colocynth. comp. no. ij. Urine passed by patient wholly through the urethra, and perfectly clear. There is still a dull pain in the perinæum. Opium discontinued.

26th.—Still improving. The sinus is now completely healed, and the prostate is rapidly regaining its normal size. The patient had been out of employment for some time on account of hist rouble, and was anxious to get to work; and, although I enjoined upon him complete rest and the utmost caution for some time to come, he felt so much better three days later that he resumed his place as a brakeman on the Erie Railroad. I saw him three weeks later, when he expressed himself as "feeling O. K."

The treatment was adopted in this case with a view of destroying the lining membrane of the sinus, and exciting an adhesive inflammation which should glue its walls together; and in order that this might not take place at the extremities only, the rectal opening was retouched at intervals until it was quite certain that the process was completed along the whole course of the canal. As to the paralyzing of the sphincter, it may or may not have played a part in the favorable termination of the case. It was necessary that the parts should be at complete rest, and this could hardly be obtained with an hypertrophied sphincter continually contracting. Besides, this was in itself a condition requiring treatment. It may have been due to the irritation of the fistula, but undoubtedly was itself a source of annoyance, and a drawback to the rapid healing of the sinus. It was, therefore, considered advisable to paralyze it, and this was done in preference to the operation of complete division recommended by Boyer, Dupuytren, Brodie, Willard Parker, and others, as being less severe; and the result justified the procedure.

The case should not be dismissed without a word in reference to rough catheterization. The surgeon whom the patient consulted in Philadelphia was probably not fully aware of the cause of the retention of urine, else he would not have used so much force in the neighborhood of the prostate as to make the patient lose his senses. In this instance the rupturing of the abscess had no material injurious effect, but Gouley ("Diseases of the Urinary Organs," 1873, p. 261) relates the following case, in which the consequences were more disastrous, and which shows conclusively that too much caution cannot be exercised in cases of this kind: "In 1864 a young man was brought to Bellevue Hospital suffering from retention of urine. The house-surgeon introduced a silver catheter, which met an obstruction in the region of the prostate; after some pressure the instrument advanced suddenly about an inch, when two ounces of pure creamy pus flowed through the catheter, but the bladder could not be entered. From this time the bladder relieved itself spontaneously. The patient died with symptoms of pyæmia in the course of two weeks. At the autopsy there was found a ragged opening in the floor of the urethra, leading to a large cavity, with dirty, sloughy walls, containing stale urine and pus, and the whole prostate was disorganized. Through this opening in the urethra the urine had made its way into the cavity of the abscess, and had caused the damage above described."

But few cases of recto-urethral fistula have found their way into the journals, and this is probably due to the small degreee of success attending their treatment. From a perusal of these the following notes have been collated:

Recto-urethral fistula occurs as a consequence of an abscess which is situated in the tissues between the bowel and the urethra, and quite commonly it is located in the prostate gland. The usual termination of these abscesses is in perineal fistula, having one end of the sinus or sinuses either in the urethra or rectum, forming a urethral or anal fistula; occasionally the termination is by opening externally through the perinæum, and internally both by the rectum and urethra, or recto-urethro-perineal fistula. Still more rarely they open into the urethra and rectum without any external orifice, and they then constitute the most troublesome and annoying of all varieties, the recto-urethral. It is unnecessary to speak here of the manner of formation of the abscesses which result in the formation of sinuses, or of the treatment of fistula except where it exists as a communication between the bowel and the urethral canal only.

This condition is first made evident by the appearance in the urine of fecal matter, more rarely by the patient passing urine by the anus, especially when at stool; and sometimes air will be voided through the urethra. These symptoms are usually preceded by those of abscess in the perinæum. When a patient presents himself complaining in the above manner, a thorough examination should be made both by the rectum and urethra. A steel sound should be passed into the bladder, the finger then introduced into the rectum, and the prostate and tissues lying between the two carefully felt. If the rectal opening of the sinus is too high to be reached by the finger, or if it be situated beyond the stricture, the walls of the sinus may still be made out with tolerable certainty. The Bodenhamer speculum should next be introduced, and a probe bent to the proper curve may be passed through the sinus and made to strike the sound in the urethra.

With the symptoms before enumerated, the only possible malady with which recto-urethral fistula could be confounded is recto-vesical fistula. The points of difference are as follows: In recto-urethral fistula the urine passes by the bowel *only* during the act of micturition, in recto-vesical it may do so *at any time*. In recto-urethral fistula the fæces may pass by the urethra *at any time*, in recto-vesical this occurs *only* during the act of micturition. These points, in connection with the physical examination, will serve to establish a positive diagnosis.

Before we can proceed to intelligently treat this variety of fistula, the cause of the abscess which gave rise to it must be ascertained. Often it is due to stricture of the urethra, and is caused by the urethra behind the stricture becoming ulcerated, some urine escaping into the surrounding parts, there putrefying and giving rise to an abscess. In stricture of the rectum the same thing happens, fecal matter escaping and acting in a manner similar to that of the putrefying urine. In cases of this kind all treatment directed immediately to the fistula would prove unavailing, unless the stricture were first attended to. This should be relieved in one of the usual ways, when the fistula will generally heal without any further interference, especially if it be of recent occurrence. Should it prove obstinate, however, or where no such obstacle as a stricture exists, rest in the recumbent position, opium to keep the bowels quiet, with an enema every few days to clear them, and the daily emptying of the bladder by means of a catheter, will often have the desired effect. When these means fail, the operation done in the case reported should be resorted to, or the galvano-caustic wire might be substituted for the nitrate of silver. Sir Henry Thompson reports a case ("Holmes's Surgery," vol. iv., p. 986) where he effected a cure by placing the patient flat on his face during the act of micturition, so as to make the urine pass through the urethra. This method should be tried before resorting to the operation done by Drs. Nott and Emmet (New York Medical Journal, September, 1870), which consists in incising all the tissues from without down to and into the sinuous track, paring the walls of the sinus and bringing the wound together in the manner adopted by Dr. Emmet in his operations for fistulæ in the female. This has been done in but one instance, and the favorable result of the operation justifies its repetition.

ART. II.—*On Sycosis; A Clinical Study.* By A. C. SMITH, M. D., Decorah, Iowa.

THE common form of sycosis is the appearance of one or more tubercles on the bearded portion of the face. These tubercles grow slowly, the centre becomes covered by a crust, on removing which are seen the mouths of the hair-follicles, filled with pus. Generally after several weeks, a softening takes place, which commences in the centre of the tubercle and often rapidly involves the periphery; the result is a deep ulcer, with sharp edges, and a dirty-colored, yellowish base. In cases where the peripheric part of the tubercle has not been involved by the mortification, the edges are thick and inverted, not unlike those of an ulcus callosum. The hairs on the softened spot partly fall off, or become loosened, and finally there is left a cicatrix, either quite bare or thinly covered with hair.

It is not only in the beard and eyebrows that these tubercles are found. This form of sycosis, as well as those described afterward, may also exist on the cheeks, on the nose, and on the forehead.

It is necessary here to mention a symptom that is most easily observed on parts of the face covered with lanugo, and which has a diagnostic signification in cases where the characteristic eruptions in the beard fail, or where a multiple eruption over the whole face may cause an error in diagnosis, viz., that the tubercles or ulcers are often surrounded by a dirty-red patch a little elevated, and especially conspicuous on a pale face. This patch presents several peculiarities. The surface is first smooth, later it often becomes wrinkled, and then the prominences appear filled with a serous fluid, all of which can easily be observed with the naked eye. This condition is followed by softening, which generally commences from the edge of the ulcer, and may extend over the whole patch or only a part of it. The field is seldom regularly limited; in some places the circumference may be curved, in others straight and angled, so that the whole may present the aspect of an irregular polygon, in which the ulcers may have a more central or a more peripheric seat. It is of importance to notice this irregularity of the circumference of the injected patch, because it shows the injection to be something different from the common congestion surrounding an inflammatory focus, and to have its full value as a specific symptom.

What further proves the significance of the patches described is that they may exist alone, not being an appendix of an ulcer or a tubercle. Such independent fluids may be found on old nasi. Having lasted a long time and presented the characteristic signs, they usually submit to a partial or total softening that shows itself by the formation of a crust. Yet the destruction in these cases is not so deep or so rapid as in the cases previously described; the ulcer becomes more superficial, but of the same torpid character. It heals up, leaving a depression in the skin of irregular form, either quite smooth, or partly deepened, or like a furrow. Where the whole spot is not involved by the softening, it may partly resume the normal aspect of the skin.

This phenomenon constitutes the second form in which sycosis may manifest itself. There is still a third.

This is characterized by small, thin crusts covering the mouths of one or more hair-follicles. If the coexistence of the tubercular form have not led the patient to a frequent and minute observation of the surroundings, these crusts are not easily noticed, because they are not accompained by tumefaction of the skin. By-and-by they grow thicker and assume a dirty-yellow color, and they adhere rather firmly. Having removed them, one sees on the surface below acute prominences that present casts of the hair-follicles. Likewise here, as in the tuberculous form, the thicker and deeper-rooted hairs are more firmly adherent, while the more delicate are more easily cast off, sometimes following when the crust is lifted up; yet in general the hairs are not so liable to loosen in this form. The openings of the follicles present themselves dilated and more or less excoriated in proportion to the duration of the crusts. If the process be allowed to follow its own course it will lead to ulceration, which in these cases too has a slower development, and remains more superficial than in the tuberculous form. Where the process has gone so far as to ulcerate, depressions are left in the skin like those resulting from softening of the patches described.

It has been said above that this formation of crusts is not usually accompanied by tumefaction, yet it has been observed in one case of an eruption on the nose and one cheek. Around an ulcer on the nose, the result of a softened tubercle, with sharp edges, without any patch of the kind described, there arose on the normal skin a regular circle of separate noduli, of the common color of the skin, feeling like the eruptions of tinea herpes. After some days there were formed on the tops of the knots small crusts of the same character as those formerly described. They adhered firmly, and in removing them several casts of the subjacent follicles followed, and some delicate hairs were loosened. The openings of the follicles appeared dilated and excoriated; in some places a superficial loss of substance of the skin resulted. As the diagnosis may be looked upon as certain, this case could be cited as a fourth form that sycosis can assume.

The essential result of a comparison between these forms is, that they all tend to ulceration of the skin, and that the ulceration in the tuberculous form extends more deeply than in the other forms, where it remains more superficial.

It seems that the disease generally commences as a tubercle, and that the other forms arise secondarily; yet a primary appearance of the other forms cannot be denied. Probably the beginning of the disease, in many cases, is not noticed.

The consequent spreading of the disease often goes on continuously; in other cases it springs from one place to another; yet almost always in such a way that only small parts of the sound skin separate the earlier and later eruptions. Often an ulcer does not heal completely, but a small edge is left, from which the process takes a new start. The above case of circular eruption of knots around an ulcer on the nose affords an unusual instance of a regular way of spreading.

That sycosis is to be placed in the group of skin-diseases due to vegetable parasites is without doubt. One can be convinced of it by examining those hairs which are easily pulled out. Even to the naked eye the root of the hair appears thickened; in the hair-sheath one can, by aid of the microscope, find both mycelium and sporules, the latter partly separate and partly forming conglomerations like blackberries.

The formation of tubercles, however, and the ulceration, cannot be accounted for by the existence of the parasite in the epithelial tissue of the hair-follicle alone. The ulceration is too extensive to be the result of any irritation or pressure caused by the parasite filling up the hair-follicle. It is more reasonable to account for the formation of tubercles, and the consequent ulceration, by supposing that the corium too becomes infiltrated by the parasite, and causes the final change.

If we consider the wrinkled condition of the red patches as the result of a defective production of the cellules which constitute the rete Malpighii, this phenomenon points to a disintegration of the corium.

The phenomena characterizing the third form, viz., the formation of crusts, excoriation, ulceration, and the remaining depressions in the skin, are evidently the consequence of the parasite gradually growing from the surface inward and involving the corium. This cannot be caused by the pressure from the parasite growing in the epidermis, because the affected strata soften successively and do not form a crust, as in favus, where the pressure of the crust is sufficient to produce an atrophy of the corium.

The obstinacy with which sycosis resists local treatment, which in the other parasitic skin-diseases is so effective, is also a proof of the deeper seat of the parasite in this disease.

Sycosis consequently differs from other skin-diseases due to vegetable parasites, in that the parasite in this disease not only keeps to the epidermoidal or epithelial tissues, but even involves the corium.

In the above-described case of a secondary nodular eruption, the circular distribution of the nodule round a central focus shows an analogy to tinea herpes, which may be of interest to those who believe in the unity of all skin-diseases due to vegetable parasites. I have not, however, seen any thing that could prove a transformation of this disease into herpes or favus, or the reverse, as has been lately mentioned in a treatise on skin-diseases by Dr. Purdon, of Belfast. Even in a case I have seen of sycosis scattered over the half of *pars capillata capitis*, the local phenomena were too distinct to allow a mistake.

Treatment.—It has been advised to pull out the hairs on the affected spot and employ strong caustics, and even excision of the affected spot has been practised; but these methods are too much like Alexander's manner of loosing the Gordian knot to be of any practical value. One feels tempted to apply weaker caustics on the torpid ulcers, but the effect is generally very bad: especially is cauterization not advisable where the ulcer has thickened borders, or is surrounded by a specific patch; for, in such cases, it is liable to be followed by a rapid destruction of all the infiltrated parts, while otherwise, where no irritating treatment has been employed, and where the infiltration is superficial, such spots may resume the normal aspect of the skin.

Hebra recommends a paste of equal parts of sulphur, alcohol, and glycerine, and claims by this remedy to cure every case of sycosis in fourteen days. This treatment, however, by its irritating effect, often causes as much ill as good. The alcohol produces hyperæmia, and the glycerine tends to the same result by producing a higher local temperature of the skin. This remedy may thus become the means of hastening destruction when applied on spots which, because of their infiltration with the parasite, are predisposed to suffer this change. The application of dry sulphur has not this disadvantage; and, further to avoid it, we should not even syringe with hot water to remove the crusts, but lift them up with the point of a lancet; precipitated sulphur is then to be applied with a brush, three or four times a day. Later, one or two applications a day will be sufficient. After this treatment is continued two or three weeks the ulcers will present a clean, red base, and the final healing will go quickly on.

It will certainly hasten the cure to remove the loose hairs; but, if the hairs be pulled out, they are not regenerated; if they be left untouched, a good many will remain, even on places where the ulceration is deep, and in the future help to cover the unsightly cicatrix.

ART. III.—*Penetrating Pistol-Ball Wounds of the Chest; what is their Relative Fatality?* By THOMAS T. BLAND, New York.

IN "The Medical and Surgical History of the War of the Rebellion," Part I., prepared by George A. Otis, Assistant Surgeon, United States Army, at page 610, occurs the following passage:

"Other causes of the inadequate appreciation of the gravity of wounds of the lung are the prominence given to exceptional cases of recovery after very severe injuries of the chest, and the interest they naturally awaken, and also the comparative frequency of examples that are to be met with in authors of recoveries after perforations of the chest by the rapier or bayonet, or by small pistol-balls. Confining their attention to a limited number of cases, some writers are betrayed into the error of regarding the latter group of injuries very lightly;" and in a note the writer adds: "Thus Dr. F. H. Hamilton ('Principles and Practice of Surgery,' 1872) announces that pistol-balls, with small shot, seldom prove fatal when lodged within the chest, unless from wounds of the heart or great vessels."

At the request of Dr. Hamilton, I have examined carefully the records of Bellevue Hospital. These records are in some respects imperfect, but, as near as I can ascertain, there have been admitted to this hospital, between the years 1865 and 1875, thirty-six cases of pistol-ball wounds of the chest. Of this number twenty-one were examples in which the balls were supposed to be retained in the cavity of the thorax ("penetrating"), only five of whom are recorded as having died. The examples in which death occurred are as follows:

1. James Logan aged twenty-two years, wounded on Janu-

ary 5, 1870, on which day he was admitted to the hospital. Ball entered on the left side at the junction of the fourth costal cartilage with the sternum.

Symptoms.—Patient suffering severely from shock; pulse extremely feeble; pericardial friction-sound; excruciating pain and dyspnœa.

Autopsy.—Pericardium wounded in front, on the left side, and posteriorly; pericardium filled with blood; ball found in the upper lobe of the right lung; lung engorged with blood —(Record of 1869–'70, p. 174.)

2. Josephine Kuminsky, aged forty-two years, wounded on May 7, 1868; admitted to the hospital on the same day. Ball entered at the sterno-clavicular articulation of the left side.

Symptoms.—When first admitted the patient complained of pain in the shoulder; excepting which she was quite comfortable; subsequently there was an excessive hæmorrhage from the wound.

Autopsy.—Pericardial sac immensely distended with a seropurulent fluid; heart covered with lymph; abscess of the middle mediastinum.—(Record of 1865–'68, p. 432.)

3. B. Cavanagh, aged twenty-five years, wounded on March 30, 1871; admitted to the hospital on the same day. Ball entered at the lower border of the ninth rib posteriorly, four inches from the scapula.

Symptoms.—Suffering severely from shock; extremely feeble; surface cold and blanched.

Autopsy.—Left lung compressed by two quarts of blood; comminuted fracture of the ninth rib; intercostal artery wounded; bullet found in the chest.—(Record of 1870–'72, p. 117.)

4. Robert Montgomery, aged twenty-two years, wounded July 4, 1870, on which day he was admitted to the hospital. Ball entered on the left side of the sternum opposite the fifth costo-sternal articulation on a line with the nipple.

Symptoms.—Surface cold and blanched; pulse imperceptible at the wrist; anxious facies; jactitation, etc.

Autopsy.—Pericardium contained bloody fibrine; right pleural cavity contained six pints of dark, fluid blood and some large clots; the ball perforated the sternum and pericardium, passing through the wall of the right ventricle, and through the cavity of the right auricle; ball found in lower part of the lower lobe of the right lung.—(Record of 1870–'71, p. 165.)

5. August Weiking, aged forty years, wounded July 7, 1874, on which day he was admitted to the hospital. Ball entered the left side of the chest in the fourth intercostal space, two and a half inches to the left of the median line, and about an inch above and a little to the right of the left nipple.

Symptoms.—Pain referred to the inferior angle of the scapula; hæmorrhage from the wound; hæmoptysis suffering greatly from shock; tissues around the wound emphysematous.

Physical Examination of the Chest.—Slight dullness around the seat of the wound; bronchial breathing; large and small *râles;* patient delirious, etc.; no autopsy.—(Record of 1874, p. 136.)

From which it will be seen that only in one instance did death occur where none of the large vessels or the heart was wounded, a fact which fully sustains the remarks of Dr. Hamilton as made in his treatise on "Military Surgery."

Of the "perforating" wounds (the balls passing entirely through), one died. The following is the case referred to:

Emma Claus, aged seventeen years, wounded May 18, 1871, admitted to the hospital on the same day. Ball entered just below the apex of the heart, and was removed from beneath the integument of the back.

Symptoms.—Paleness of the face and catching respiration.

Autopsy by the Coroner.—The ball did not wound the pericardium, but passed through a portion of the stomach and lower left lobe of the left lung, behind the diaphragm.—(Record of 1871–'72, p. 154.)

It seems proper to add that the evidence presented by Dr. Otis, the author of the "Surgeon-General's Report," to show that the general statement made by Dr. Hamilton is incorrect, fails completely to do so. In fact, it confirms his statements so far as it has any value whatever. It is as follows:

"In sixteen cases of fatal penetrating gunshot-wounds of the chest, reported in the army, during the past five years, three were instances in which a pistol-ball or bird-shot lodged within the chest without injury to the heart or great vessels." This only shows that three died out of sixteen cases.

Dr. Otis adds: "Of the first 1,500 cases of penetrating gunshot-wounds of the chest entered on the registers of the late war, thirty-three were inflicted by pistol-balls. Twelve of these were fatal. In six cases the ball emerged; in four it lodged within the thorax; in one in the glenoid cavity; in one this point is not noted."

Twelve were fatal out of thirty-three cases; but we do not learn in how many of these fatal cases the heart or the large arteries were wounded; and the facts are not pertinent to the question in dispute. It is difficult, therefore, to understand for what purpose they are given.

The statements made by Dr. Otis are the more confusing, for the reason that he does not restrict the terms "penetrating" and "perforating" to their ordinary technical meaning, but employs the terms "penetrating" (those in which the ball enters the cavity of the thorax but does not pass out) and "perforating" (those in which the ball passes entirely through) as synonymous and interchangeable.—(*See* pp. 478, 486, 488, of Report).

ART. IV.—*The Physiological Cause of Muscular Contraction of the Gravid Uterus.* By THOMAS J. MAYS, M. D., Upper Lehigh, Pa.

THAT there is some grand and unvaried principle underlying and pervading all muscular action seems too obvious to admit of any doubt. Manifested in its varied rhythmical and spasmodic aspects, we see it in physiological and pathological processes; indeed, the question awaits solution, whether this principle of action is limited to the confines of the organic world, and whether it does not invade the precincts of the inorganic world in like manner. A true and logical understanding of the *modus operandi* of muscular action is not only valuable as an aid in the pursuit of physiology and pathology, but also a never-failing guide in therapeutics; and enormous and extensive as the field before us lies, we shall not shrink from it, yet enter upon our task with a great many fears and misgivings, lest we should not be able to establish what we set forth in the title of this essay.

That muscle itself is involved in its own contraction is true; but, before we can ascertain by what principle this phenomenon seems to be governed, we must familiarize ourselves with a short history of muscular contraction.

The almost numberless ideas which have been advanced and promulgated in the history of medicine concerning *irritation*, *stimulation*, *excitation*, etc., form a part of the oft-repeated and it seems never-ending conflicts about the proper relation between matter and force; and in the development of these ideas, as well as of any others, we find that, in proportion as an art or science really advances, it clothes itself in nobler and more elevated thoughts, and loses the crude and fallacious doctrines which belonged to it in a former period. The doctrine of a vital spirit, controlling all bodily functions, embodied itself in the writings of nearly all the early philosophers. The *pneuma*, *archæus*, etc., were supposed to carry on all physiological phenomena, cause disease as well as protect the body from its ravages. All branches of learning were, and some still are, infected with this idea of duality. In the earlier history of mankind, all natural phenomena were supposed to be accomplished by some external power. Ignorant of all natural laws, the early mind was easily led to form inferences and crude notions of its environment.

Most works on physiology of the present day ascribe muscular action to an inherent principle, called "irritability;" a power residing in muscle, which, when excited or stimulated, produces contraction of the muscular fibres. So, also, do we find another phantom-power, *the vis medicatrix naturæ*, occupying a very prominent place in our medical literature, and described as affording immunity or protection to the body. And so also the *vital principle*, which is supposed to infuse itself in lifeless matter and bring forth the various phases of animal and vegetable life. Have we not here the relics of primitive times still clinging to our so-called more modern and advanced ideas? Are not these dualistic notions, which invoke the aid of an external factor to explain natural phenomena, still remnants of ancient polytheism? Let us be monotheists, discard those doctrines which have outlived their day and generation, and employ and be guided by those which the light of modern science sheds upon us.

Recent researches into the cause of muscular movements tend more and more to bring it within the domain of molecular physics, and among the many investigators into this problem none deserves greater consideration and higher rank than Dr. Radcliffe,[1] of England. Although the labors of Humboldt, Galvani, Matteucci, and Du Bois-Reymond, were of inestimable value in establishing the truths of animal electricity, yet Dr. Radcliffe pushes the investigations into new fields, and ventures to explain the physiology and pathology of muscular motion in all its diversified forms by means of the natural forces of the body. This theory, if true (and there is no direct evidence to controvert it, but on the contrary a great deal to sustain it), will cause a radical reform in most of our ideas of bodily motion, and will purge one branch of learning of one more obsolete and cumbersome adornment—that of "vital irritation."

If the electrodes of a galvanometer be brought in contact, the one with the surface composed of the sides of the fibres, and the other with the surface made up of the ends of the fibres of living muscle while at rest, the instrument will indicate that the longitudinal surface is electrified positively and the transverse surface negatively. Now, these conditions bear a certain and constant definite relation to each other in muscle during the state of inaction.

If the electrodes of a galvanometer be applied to a muscle in like manner during its state of activity, the electrical relations are reversed, the coating or longitudinal surface becomes electrified negatively, and the core or transverse surface becomes electrified positively. These conditions also bear a definite relation to each other. On the near approach of *rigor mortis* the electrical relations are also reversed to what they are in living muscle during rest, and, on the actual arrival of

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[1] "Dynamics of Nerve and Muscle," by Dr. C. B. Radcliffe.

rigor mortis, natural electricity is no longer to be found. Nor is this all, but it is proved by the electroscope that, during the state of rest, living muscle furnishes evidence of electricity of high tension, and while in action there is a discharge of electricity analogous to the electric discharge of the torpedo and the electric eel.

One more important fact observed in connection with this subject is, that artificial *positive* electricity suspends and *negative* electricity increases muscular contraction.

The sheath of each and every muscular fibre is supposed to be converted into a Leyden-jar. The electricity developed on the outside of the sheath, by the chemical changes of nutrition, induces a charge of the opposite kind of electricity on the inside of the sheath. As long as this charge is kept up, so long is the fibre in a state of relaxation and rest, but as soon as disturbed a discharge takes place, and contraction follows.

What is true of muscle is also true of nerve, for there the exterior or longitudinal surface is electrified positively, and the transverse surface, or core, negatively, while in the state of rest; but in action these relations are reversed, and a discharge takes place. In *rigor mortis* no natural electricity can be traced in nerve, and it is to be expected that a close relationship exists between muscle and nerve, for they both are but differentiations of what was originally a uniform mass having common properties.

Now, these facts demonstrate to us most clearly that muscles in the state of rest depend on the pressure of natural electricity, and that muscular contraction and *rigor mortis* depend upon a common cause—the absence of natural electricity; and this conclusion is strengthened by the fact that, in animals poisoned with strychnia, killed by lightning, or dying of tetanus, and of certain other exhaustive and convulsive diseases, *rigor mortis* sets in almost instantaneously after death.

We thus observe a certain electric arrangement in muscle and nerve, both in rest and in action, and, by investigating this subject still further, we find that these conditions of rest and action in muscle and nerve have a marked correspondence to certain definite states of blood and nerve supply, as the following experiments will demonstrate.

Sir Astley Cooper says: "I tied the carotid arteries of a rabbit. Respiration was somewhat quickened, and the heart's action increased; but no other effect was produced. In five minutes the vertebral arteries were compressed by the thumb, the trachea being effectually excluded. Respiration stopped almost directly, convulsive struggles succeeded; the animal lost its consciousness, and appeared dead. The pressure was removed, and it recovered with a convulsive inspiration. It then lay upon its side, making violent convulsive efforts, breathing laboriously, and with its heart beating rapidly. In two hours it had recovered, but the breathing was still laborious. The vertebrals were compressed a second time; respiration stopped, then succeeded convulsive struggles, loss of motion, and apparent death. When let loose, its natural functions returned with a loud inspiration, and with breathing excessively labored. In four hours it moved about and ate some greens. In five hours the vertebral arteries were compressed for the third time, and with the same effect. In seven hours it was cleaning its face with its paw. In nine hours the vertebral arteries were compressed for the fourth time, and the result was the same, viz.: suspended respiration, convulsion, and loss of consciousness. On removal of the pressure, violent and laborious respiration ensued, and afterward the breathing became very quick. After forty-eight hours, for the fifth time, the compression was applied with the same effect."

In a similar experiment performed by Drs. Kussmaul and Tenner, "the common innominate and the left subclavian arteries of a rabbit are included in ligatures of which the knots are so arranged as to admit of being easily slipped. In the first place, the blood is suddenly shut off from the great nerve-centres of the head and neck by tying the ligatures; in the second place, a minute and a half or two minutes later, the blood is allowed to return to these nerve-centres by slipping the ligatures; on tying the ligatures, the animal immediately loses consciousness, and falls into a state of general and violent convulsion; upon slipping the ligatures, the convulsion, which is then raging at its height, immediately comes to an end, and soon afterward consciousness and the voluntary power over the muscles return." In another experiment by Drs.

Kussmaul and Tenner, upon a rabbit, their mode of proceeding was—"1. To cut off the supply of blood from the trunk and limbs, and so divert the whole mass of blood in the body to the head and neck, by putting ligatures upon the subclavian arteries, and upon the aorta, a little below the origin of the left subclavian; 2. To cut off the supply of blood from the head and neck also by compressing the untied vessels between the fingers; and, 3. To allow the blood to return to the head and neck by removing the fingers; and these are the results: On tying the subclavians and the aorta, the animal is paralyzed everywhere below the neck. On compressing the untied vessels, this state of paralysis at once changes into that of general convulsion. On ceasing to compress these vessels, the paralysis returns instantly."

In these two experiments we find bloodlessness and too great a blood-supply having a marked and intimate association with two morbid states of the body—convulsion and paralysis. If a deficient blood-supply gives rise to convulsion, and an increased blood-supply to paralysis, then, as these are two opposite conditions, convulsion and paralysis must equally be the result of opposite pathological conditions. Bloodlessness, in giving rise to convulsion, we see manifested in death from hæmorrhage, strangling, etc.; and, in death by the knife at the shambles, convulsions occur when the animal is almost or completely drained of its blood.

Dr. Brown-Séquard divided the spinal cord of a frog in the middle of the dorsal region, and the principal nerve of one of the hind-limbs in close proximity to the spine, and the impressibility of the two limbs was tested by means of artificial electricity of a given strength. There was found to be "augmented irritability" in the limb which remained connected with the spinal cord; but there was a yet higher degree of "augmented irritability" in the one which was severed from the cerebro-spinal axis. Now, the deduction to be drawn from this last experiment is, that muscle is not constrained to action by the liberation of a force supposed to reside in the nerve-centres, but rather that the disposition to contraction is inversely related to the supply of nervous influence to the muscle, i. e., in a free supply of nervous force little inclination to action exists; and in a scanty supply or total want of nervous force a greater tendency to action is manifested.

Now, then, in summing up the conclusions to be deduced from these experiments, the states of convulsion and paralysis first claim our attention. If, as we have abundant reason to believe, muscle in a state of rest and in a state of motion is the result of two opposite electric conditions—one a charge and the other a discharge of electricity—then convulsion, which is accelerated muscular motion, must be associated with the electric condition of muscle and nerve which is characteristic of them in a state of motion, only in a more intensified degree; and paralysis, which is that state of muscle and nerve in which there is an absence of vital motion, must be associated with a somewhat similar condition of muscle and nerve, characteristic of them in a state of rest. Now, the blood may influence muscle and nerve by supplying them with natural electricity; and well can this be so, for the blood is the great reservoir whence all the plastic elements of nutrition are derived, and by which the continual process of oxidation and molecular motion is maintained throughout the body. The blood, in circulating through the plexuses of vessels surrounding muscle and nerve-fibres, gives rise to molecular reactions, the effects of which are a charge of positive electricity to the outside, or on the sheaths of these fibres, which, by induction, supply a charge of negative electricity to the inside. This is the state of rest. When the blood from any cause is obstructed in its flow, or hindered in performing its normal function, this electric arrangement is disturbed, a discharge takes place, and the muscle contracts by virtue of its own elasticity, or, in other words, by its own molecular attraction. What the exact mode of the action of electricity is in producing rest or elongation in muscle, is hard to tell, but, regardless of our ignorance, the fact nevertheless remains that a charge of electricity causes not alone muscle to elongate, but also certain inorganic substances as well. Thus, Dr. Radcliffe demonstrates that, if a narrow band of India-rubber is coated upon both of its surfaces with gold-leaf, or painted with liquid Dutch metal, similar to a Leyden-jar, it will be elongated by a charge and shortened by a discharge of electricity.

Dr. Joule, in his experiments with iron, also found that a bar of iron gains in length when charged with magnetism, and returns to its former dimensions when the magnetism is discharged. If the blood is prevented from performing its normal function by any vitiating substance, this electric equilibrium in muscle and nerve is disturbed, and contraction follows. It is in this manner that Dr. Harley explains the toxic effect of strychnia. In the experiment by which Dr. Harley shows that strychnia interferes with the respiratory activity of the blood, he takes two large test-tubes, fills them half-full of fresh calf's blood, adds a few drops of strychnia to the contents of one tube, corks them both carefully, shakes them well, and sets them aside with the mouths downward. He then leaves them in this condition for twenty-four hours, shaking them repeatedly during the interval, and at the end of that time examines the air in each tube by Bunsen's method. The air over the simple blood was found to consist of 11.33 parts of oxygen and 5.96 parts of carbonic acid; while the air of the blood containing the strychnia was found to consist of 17.82 parts of oxygen and 2.73 parts of carbonic acid; so the air over the blood and strychnia was found to contain 6.49 parts more of oxygen and 3.23 parts less of carbonic acid than the air over pure blood. Now, if air mixed with pure blood loses some of its oxygen (nearly half), and its natural amount of carbonic acid is increased, and air which is in contact with blood containing strychnia is found to contain more oxygen and less carbonic acid than the former, then it is conclusive proof that strychnia interfered with the physical and chemical changes which were carried on in the first tube, since both tubes were precisely in similar conditions otherwise. And, if strychnia has the power of changing the blood so as to impair its aërating properties, the blood under its influence must become venous, or charged with effete products of the system, unfit to nourish the tissues, and in this condition it is equal to bloodlessness; for blood which is not capable of nourishment is, to all intents and purposes, equal to no blood at all. And in this way strychnia, by first deteriorating the blood, may disturb the electric equilibrium of muscle and nerve, bring about a discharge, and thus produce contraction.

The gravid uterus, at about the end of the ninth month of gestation, begins to contract, and is subject to violent muscular action until the expulsion of its contents takes place. What now incites the womb to action; what causes it to continue to act; and what causes it to desist in its action? are questions which press us for solution. Undoubtedly, there must be a cause. It would be futile, indeed, to say there is no cause for this action, because none can be very readily assigned; and in looking for the cause we would more likely search for it in the organ itself, or in its immediate surroundings, than in some remote corner of the body. One fact which strikes even the superficial observer very forcibly is, the important connection of the fœtus and its appendages with the advent and presence of muscular action, and its absence with inaction of the organ. This, at once, seems to point out that the contents of the uterus occupy a prominent relation to this physiological process.

The most important elementary factor which we found involved in producing ordinary muscular contraction was the blood or its absence; and now let us see whether this substance could contribute any influence in bringing about muscular action of the uterine organ. It would be singular, indeed, if this agent, which plays such an important part in all other vital activities, could not be legitimately suspected of taking a leading part in this function.

The uterus receives its blood-supply from the uterine and ovarian arteries, principally from the former. The uterine artery arises from the anterior trunk of the internal iliac, descends to the neck of the uterus and ascends in a tortuous course, distributing its branches to this organ, and anastomoses with a branch of the ovarian artery, a slender vessel arising from the aorta and distributed to the ovary, Fallopian tubes, and sides of the uterus. After the impregnated ovum has attached itself to the internal surface of the uterus, it becomes itself a source of stimulation and incites the nutritive changes to increased action, especially in the particular place of its habitation, which, in turn, determines a flow of blood, followed by a rapid development of the different organic structures. The blood-vessels, at first diminutive, become larger, are injected and rendered turgid with blood; in fact, they form large tortuous cavities which are termed *sinuses.* Muscular fibres, which before were small, indistinct, and imperfect in formation, are now rendered visible and become powerful. The nerves assume an hypertrophy of like proportions. This development, which at first takes place almost exclusively in the fundus of the organ, continues until it fills the pelvis, when it wedges itself into the abdominal cavity, so that, at the end of the seventh month, the cervix is almost elevated to the superior strait, and the fundus pushed up among the viscera of the abdomen. The lower part of the body of the uterus is developed during the eighth month, and "the cervix seems to be almost wholly developed during the ninth month, and not until the end of that time is its cavity entirely effaced." One important fact must be taken into consideration here, which is, that the upper part of the fundus increases first in size, then the middle and lower parts, and, last of all, the neck becomes implicated in the operation; and we shall soon perceive that these sequent phenomena perform an important work in adapting and preparing the uterus for its final action. It is very necessary that the organ should receive its full share of blood for the nourishment of its ever-increasing component parts; and, again, it is very necessary that the portals through which the blood effects its entrance should also remain undisturbed as long as it is compatible with the well-being of the organ and its contents. The womb obtains its blood-supply principally from the uterine arteries, which enter the organ at its neck; and this portion of the organ, the neck, is the very last to become involved in the change—a very wise provision in Nature. It is very evident that, as long as the neck remains intact, the blood-supply must be carried on without almost any hinderance; but, as soon as interfered with, the organ receives a diminished quantity of blood. At full term the cervix becomes totally obliterated, and the child, by its own gravity, sinks into the lower part of the cavity of the uterus, and with its head pressing against the thin and almost over-distended rim and lower part of the fundus, which, by this time, rests upon and is supported almost wholly by the superior strait of the pelvis, is another obstacle to the free circulation.

Nor are these the only impediments to the free circulation of the blood between the uterine vessels and the main supply, but the womb itself becomes massive and heavy, loaded with the superincumbent weight of the stomach, liver, intestines, etc., and thus exerts a great degree of pressure upon the principal blood-vessels situated in the lower part of the trunk, as is clearly evinced by such diseases as anasarca, œdema, varicose veins, cramps of the lower extremities, occurring in the latter part of pregnancy, which are diseases resulting from mechanical pressure of the womb upon the principal blood-vessels.

The womb now, when one portion of its blood-supply is partially or completely cut off, does not receive a quantity of blood through the remaining inlet sufficient to nourish its already hypertrophied tissues, and it assumes, in consequence, a condition similar to the depleted state of muscles which were thrown into spasm by loss of blood, as cited in the foregoing experiments; contraction follows, and labor begins. After incipient muscular contraction of the womb has taken place, its bulk diminishes, its blood capacity is lessened, the blood which it retains is rendered still more unfit to nourish, and muscular contraction is enhanced and labor facilitated at every step of its advancement. This is consistent and in strict keeping with the history of every case of natural labor, for, at the commencement of the process, the muscular contractions are slight and ill defined, increasing in strength, frequency, and severity, until they reach their climax at the expulsion of the child.

In the present light of medical science this theory of muscular motion affords a rational solution of the therapeutical effects of ergot on the uterus. Ergot causes contraction of the blood-vessels, and in this manner becomes a powerful adjunct in arousing the dormant energies of an inert condition of the uterus.

No one is more fully aware than myself of the many defects and failures with which I have so imperfectly stated my case; yet I hope it may prove a stimulus to still further investigation in this line of thought, for the value of a correct notion of muscular action in relation to therapeutics, and to all the other departments of medicine, cannot be over-estimated.

Original Lectures.

Clinical Lecture on Contused and Lacerated Wounds. Delivered in Bellevue Hospital by Prof. A. B. Crosby. Reported for the New York Medical Journal by John J. Reid, M. D.

Gentlemen: I shall call your attention this morning to the subject of contused and lacerated wounds. These wounds are induced by contact with obtuse bodies, or in case of laceration they are torn, either by some of the many varieties of machinery, by weapons, by the teeth of animals, or by a falling or crushing body. Railway injuries are of this class, and one of the penalties which our modern civilization, with its increased and advanced mechanical appliances, requires, is that, though man loses less of his sweat, he loses more of his blood. Gunshot-wounds are contused and lacerated in their character, but, as they present certain marked peculiarities, they are generally classed by themselves.

I present you here several cases illustrating varieties of contused and lacerated wounds. This young girl tells us that three weeks ago the anterior part of her foot was run over by the wheel of an ash-cart. The parts were extensively bruised, but there was no open wound. In fact, a contused wound may be open, when it is said to be apparent, or the solution of continuity may be in the subjacent parts, when it is said to be concealed. In this case extravasation of blood took place, causing swelling and discoloration, technically known as ecchymosis; this, as you see, is still manifest, though the injury is nearly well. There has also occurred here what is common in this class of wounds. I mean sloughing or mortification. In this case, however, the vitality was not completely extinguished by the injury, and hence the slough was superficial. This case has been treated by keeping the parts elevated, and the ulcerated surface dressed with Peruvian balsam, with the view of exciting increased action. The process of repair has so far advanced that the patient may soon be discharged.

The next case I bring before you is an old gentleman, who tells us that a few days ago he was knocked down and run over by a dray. Two of the wheels passed over the left side of the chest, the left shoulder, and the left arm. An extensive lacerated wound resulted, which also was concealed in its character. There was here, also, an extensive ecchymosis, which at the time of the injury was of a deep-red appearance. In a day or two it became violet or bluish, and later brownish and yellowish. On looking at it to-day you see on the periphery a yellowish discoloration, and from that to the centre the colors vary from brown to purple and red, with here and there a shade of violet and blue. These characteristic varieties of discoloration always follow in the track of such injuries. The treatment of the case has been rest, accompanied by stimulating frictions.

This middle-aged woman says that she received her injury by means of a dummy railway-engine. It is probable that the wheel of the engine struck the dorsum and outer side of the foot, but did not run over it, as you may see that there is not that crushing which takes place when a heavy car passes over any of the extremities. After the injury it was found that the contusion was extensive, and moreover the laceration of the soft parts was also extensive, giving rise to an apparent wound. Three days after the injury the foot was placed in hot water, varying from 98° to 110° Fahr., and has been kept there ever since. She tells us that the pain and suffering were immediately relieved on placing the foot in the water, and, though I shall speak of this treatment farther on, I may say here that nearly all patients say the same about this hot-water method of treating wounds. We notice, on looking at the foot, that an external slough has formed and separated, leaving beneath a healthy, granulating surface. In this case, had the wheel of the engine passed directly across the foot, there would have been destruction of all that part of the foot beneath the seat of injury. This plan of treatment by immersion in hot water, at the temperature I have already mentioned, is indorsed by some of the surgeons in this hospital, and from the number and variety of the cases observed there can be little doubt that it is productive of much good.

I presented those cases to you to-day simply to draw your attention to them, but I have not dwelt on the minutiæ of their symptoms, inasmuch as I can far more conveniently group them together under one head, and with less loss of time give you their history from the outset.

The first and most obvious effect of a lacerated and contused wound is shock. This shock is of two kinds, mental and corporeal. The peculiar psychical condition of a patient who sees a great danger approaching him, is apt to depress the heart's action to a grave extent, and cases are by no means wanting to show that mental shock may immediately cause death, the fatal result being caused by syncope. Corporeal shock, on the other hand, is that depression which results from the contusing and crushing of nervous and other tissues. As an illustration of shock, both mental and corporeal, I may recall a case which I saw some years ago in the State of Vermont. A woman lived in a solitary farm-house, in company with her husband and son. During the temporary absence of the son the husband in an attack of acute mania seized two sticks of firewood, and with them knocked his wife down on her face, and then while sitting astride of her body he literally pounded the scalp completely off her head, denuding the calvarium to a level with the tip of the ear. In fact he pummeled this poor woman's head until he was exhausted, and when the friends came in they found him still engaged at it, with fragments of the scalp not larger than a five-cent piece scattered over the floor. When I saw this patient some hours after the injury, the head looked as if the scalp had been removed with a dissecting-knife. The extremities were cold, the pulse feeble, the heart's action depressed, the pupils dilated, and the respiration gasping in its character. In a word, she was suffering from both mental and corporeal shock, though even then she was conscious, and had made her will and given directions for her funeral. I treated this patient for the shock by surrounding the extremities with hot water in bottles, making friction with flannels, and giving whiskey in half-ounce doses every few minutes; a careful watch was kept on the pulse, and, as it became fuller and improvement began to take place, the whiskey was lessened. I employed another agent, and one in which I have much confidence; I refer to strong green tea. To digress for a moment, I may say that the use of strong tea was forced on my notice by a patient who refused to take any form of alcohol. He was suffering from shock induced by an amputation performed between the middle and lower third of the thigh. This amputation was secondary to a gunshot-wound, and was what the French call "mediate." The shock was absolutely terrific; the pulse remaining cold and pulseless several hours; failing to quiet his conscience in regard to the use of alcohol, I gave him strong tea freely, and was gratified to find that he did well with it, reaction soon taking place. I may also add that, in women after delivery, tea forms a satisfactory substitute for alcohol, and one which will bear a more extended use.

Before dismissing the case of the woman with a denuded calvarium, I may say that the patient made a complete recovery, though two years elapsed before cicatrization was effected. An interesting pathological point in connection with it was, that there was complete exfoliation of the outer table of the skull: a little island of dead bone would be observed; this would gradually blacken and separate, and beneath there would spring up a luxuriant crop of granulations which passed on to the formation of bone. This process, from the extent of the surface, was slow and tedious, and required a good deal of stimulating treatment, the head meantime being protected by a sheet-iron cap, properly padded around its margin.

To resume the subject of contused and lacerated wounds. A second peculiarity of them is the absence of pain, entirely or in part. Thus, an arm has been torn off and the patient has been unconscious of it; in other instances where the injury is less complete there may be a moderate amount of pain, but, in all cases when reaction sets in, the pain is an important symptom. A third peculiarity is the absence of hæmorrhage. It has come to be an aphorism, indeed, that lacerated wounds do not bleed, and this absence of hæmorrhage is easily explained: first, by the depressed state of the circulation from shock, which renders the flow of blood feeble; secondly, when vessels are torn through, their edges are ragged and rough, and, with the contraction and retraction of the muscular coat, another obstacle is presented to bleeding. All of these factors acting together serve to promote rapid coagulation, and explain why we do not have bleeding in proportion to the number and size of the wounded vessels. Do not let me be understood to say that lacerated wounds never bleed, for, if a very large vessel is torn across, an amount of blood may be lost which will induce death. In other cases an extensive oozing of blood may give rise to a kind of parenchymatous hæmorrhage.

Before speaking of the treatment of this class of wounds, let me call your attention to the great extent of injury which may happen to subjacent parts, and which may at the time be entirely unsuspected. The most marked experience I have had in this matter has been from observing the effect of solid shot. If a solid shot moving with a rapidly-diminishing velocity, and having a motion on its own axis, impinges obliquely on the surface of the body, there may result an extensive laceration of the parts beneath, and at the same time no appreciable injury of the skin. During the war I saw a case of this class where without external injury the liver was extensively lacerated.

In the treatment of contused and lacerated wounds, arrest hæmorrhage if it be present. In case of injury of a large vessel, it is best to tie the vessel and avoid any risk when reaction sets in, and in doing this it is wise to select a part in the continuity of the vessel above the lacerated tissues. If the hæmorrhage is venous and troublesome it is wise to elevate the part and apply moderate compression. The wound should then be thoroughly cleansed by allowing a stream of water to flow freely over the surface. Foreign bodies are to be removed by forceps, and all clots, which in reality are foreign bodies, should be carefully separated as far as possible, inasmuch as they will be sure to decompose and form septic matter on the wound. The chance of union by first intention is slight, but, as cases occur in which it does sometimes happen, it is wise to coapt the edges of the wound. The majority of surgeons advise against the use of sutures, and many object to adhesive straps, but a careful examination into the extent and severity of the laceration and contusion must decide you in regard to your action. Some surgeons, recognizing the fact that sloughing must occur, have suggested immediate cutting away of the contused and dead parts. If we were sure how much was dead, there could be no doubt as to the wisdom of their view, but, inasmuch as this is difficult if not impossible to determine, it is better to allow Nature to decide the matter for us. The common treatment is a simple water-dressing; this has the advantage of being light, and at the same time enforcing cleanliness in its practice. The temperature of the water-dressing is of a good deal of importance. I think it is a safe rule to leave the matter to the patient, and allow his sensations to settle the matter. Yet I think it has been proved in this hospital that an elevated temperature proves a marked advantage when the vitality is low. The rule of lacerated and contused wounds is to slough to a greater or less extent. The separation of the slough is dependent on cell-infiltration or the formation of granulations, and this is retarded by cold and aided by heat, and the more rapidly this is brought about the more rapidly will adhesive inflammation be set up and insure the immediate safety of the patient by plugging the capillary vessels and closing the lymphatics. The dead parts on the surface of these wounds undergo rapid decomposition, and the resulting putrid fluid will, when granulation is not established, cause septicæmia. I have observed as a clinical fact that such a result does not take place before forty-eight hours, and if it does not occur before four days it is not likely to occur at all.

Different methods have been advised at different times in the treatment of this class of injuries, and I do not feel that I am the advocate of any particular system, but I think also it is only just to say that the hot water has afforded results which warrant a more thorough use of the system. I fancy that the reason of its success is due—first, to the exclusion of air; second, to the soothing effect of warmth and moisture; third, to the fact that the heat favors cell-infiltration; and, finally, and perhaps most important of all, the changing of the water from time to time removes all septic matter, and thus prevents absorption of purulent and putrid elements.

One common and extensive practice is to use poultices, which is a modification of the hot-water treatment. Poultices can be applied to surfaces where it would be impossible to apply the hot water without immersing the whole body, and these can be improved by adding to them charcoal, permanganate of potash, and salicylic or carbolic acid. The poultices should be generous in size, and changed frequently. It is not uncommon after such injuries as I have mentioned to find that patients suffer from gastric or biliary derangements, and it is well if such trouble occur to give them a mercurial cathartic.

I have mentioned hæmorrhage as an immediate accident, but I wish now to draw your attention to what is called secondary hæmorrhage. This complication occurs just at the time of the separation of the slough, and we are to infer that the depression of the vitality of the part resulting from the injury was greater than the reparative power, and consequently cell-infiltration and adhesive inflammation were wanting, and on the separation of the slough the mouths of the vessels were not closed. This secondary hæmorrhage is frequently fatal, and I have known it to occur during sleep. Whenever suppuration takes place near important vessels, and this suppuration is the result of laceration or contusion, we should be careful to have attendants continuously at the bedside who are practically familiar with the means of placing their fingers so as to apply digital compression. We may consider that this danger has passed by the fourteenth day; it is most liable to occur from the tenth to the eleventh day. In case secondary hæmorrhage does occur, and is not of grave character, we resort to the means known to us to control hæmorrhage, and of these the first and most important is compression, if we can apply it; or possibly the elevation of the extremity, if it be an extremity that is involved, may have a happy effect.

Cold is often of marked advantage, and with or without the cold we can employ hæmostatics, such as the persulphate of iron. If the hæmorrhage is arterial and important, we must tie the main vessel above the wound.

I warn you also of another important complication which may arise; I mean tetanus. This is most liable to occur in patients who are nervous, and who are exposed to draughts of moist air, either hot or cold. You will first detect a slight twitching of the muscles, or a slight rigidity about the jaws, passing into lockjaw. The treatment of tetanus you will learn in the course of surgery, but here I may say that it will usually require powerful anodynes to control these symptoms, and, if the tetanus becomes fairly established, I am afraid that you will fail to cure the patient. The treatment of lacerated and contused wounds, requiring amputation, barely comes within my limits at present, but I think I can fairly say that you must be careful to make your flaps out of uninjured tissues. In conclusion, let me say that if the suppuration is liable to be excessive, you must anticipate by placing the patient under favorable hygienic surroundings, and insisting on a generous and nutritious diet: I think that surgeons of the greatest experience hold that those who are persistently nourished develop less surgical fever and convalesce more rapidly than those who have not this advantage.

Clinical Records from Private and Hospital Practice.

I.—*Cases of Tracheotomy in Croup and Diphtheria; Recovery.*[1] By Frank W. Rockwell, M. D., Adjunct Surgeon, Long Island College Hospital.

Charley M., a sturdy, healthy boy, three years of age, who has been subject to attacks of "sore-throat" due to chronic hypertrophy of the tonsils, was first seen by me for present illness Wednesday, June 9th. At this time he was suffering from a spasmodic cough, which had been preceded by gastric disturbance and catarrhal symptoms. No fever; respiration and pulse normal, except when accelerated by a paroxysm of coughing. A slight hoarseness was present, but no pain in the throat or difficulty in swallowing. The cervical glands not affected. As whooping-cough was at the time prevalent in the neighborhood, and as a younger sister was suffering from precisely the same symptoms (with the exception of the hoarseness), I prescribed a mixture containing bromide of potassium and belladonna.

Both children rapidly improved, and I had ceased to have any special anxiety in regard to them, when I was called to Charley on the afternoon of the 13th, as he had been suffering an aggravation of symptoms during the preceding night.

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[1] Extracts from a paper read before the Kings County Medical Society.

High fever, with rapid, bounding pulse, complete loss of voice, and great difficulty in breathing, increased at times to such a degree as to leave the child completely prostrated, had alarmed the parents; but, as temporary improvement had followed the use of emetics and a warm bath, I was not sent for until a return of the symptoms toward evening.

I saw him at 6 P. M., when I found him with flushed face, hot, dry skin, answering questions in a hoarse whisper, refusing to swallow even liquids, but sitting upon his mother's lap, and perfectly intelligent.

A hoarse, ringing cough was present for the first time since I had seen him, although the mother assured me that it had existed during the previous night.

His pulse, which was full and bounding, was 140; the temperature in the axilla 100½°, and his respirations 32.

Auscultation revealed simply dry *râles*, sonorous or sibilant, and slightly increased resonance on percussion.

An emetic was given, with some relief of symptoms, and the child put upon the following prescription:

℞. Ammoniæ hydrochloratis,	℈j.
Potassæ chloratis,	ʒ ij.
Aquæ camphoræ,	℥ iij. M.

S. A teaspoonful every hour.

The temperature of the room was kept up to 75° or 80°, and the steam generated by pouring boiling water upon unslacked lime was constantly inhaled during the night. Under this treatment the cough became less distressing, but the dyspnœa continued unrelieved, the child becoming gradually feebler, until toward morning, when his father, fearing immediate death from suffocation during an unusually severe attack, started for me, but was recalled by his wife on reaching the sidewalk, as the paroxysm had passed off.

At 9 A. M. of the 14th I again saw the patient. His face was now pallid, covered with a light, cool perspiration, and wearing an anxious expression. The pulse still 140, but soft, feeble, and irregular. Temperature 100¾°, respiration 30.

The cough, which had increased in frequency, was now less clanging, and was the only interruption to the half-unconscious condition in which the child lay. The case was now examined by Prof. E. S. Bunker, who in consultation with me agreed as to the urgent indication for relief from impending death by asphyxia. With the consent of the parents, the child was anæsthetized, and I proceeded to open the trachea, between the cricoid cartilage and the isthmus of the thyroid gland.

As the symptoms were not so alarming as to demand instant relief, I made a careful dissection until I reached the upper border of the thyroid gland, when, while waiting for the cessation of a slight venous oozing, the child was seized with an attack of dyspnœa and coughing, its face became pallid, it gasped and fell back apparently lifeless.

As rapidly as possible I completed the operation, and, by direct insufflation and persistent attempts at artificial respiration, was finally rewarded by a slight gasp, and signs of returning circulation. As soon as respiration seemed restored, the tube was secured, and stimulants freely given by the mouth.

Almost the first conscious effort on the child's part was a voluntary cough which resulted in the expulsion of a large piece of pseudo-membrane, the detachment of which just previous to the insertion of the tube had probably caused the alarming symptoms just mentioned. The patient was now put upon brandy and beef-tea, and treatment continued as before, with warm atmosphere and inhalations. At 2.30 P. M. the child was again visited. I found him *lying* quietly in bed, breathing easily and noiselessly. His color had begun to return, he had swallowed a fair amount of beef-tea and brandy, and had slept an hour or two. His pulse, still 140, had gained in volume and regularity. His temperature was 100°, and his respiration 26. At 8.30 P. M. I found him sleeping quietly and easily; pulse 140, temperature 100°, respiration 26. His skin was moist and warm, he had swallowed nourishment freely, and had coughed up at intervals, during the day, shreds of membrane, while the inner tube of the canula required frequent cleansing to free it from the viscid mucus which was constantly forced into it. The interval between each dose of medicine was now lengthened to two hours.

June 15*th*.—At 9 A. M. I found the little fellow begging his mother to let him get up, as he wanted to look out of the window. Pulse 120, temperature, 101°, respiration 26. Shreds of membrane still expectorated through tube. 8 P. M.—Sleeping and eating well, but slightly feverish. On obstructing the orifice of the tube for a moment, and asking him to cough, *the harsh, metallic sound could be produced at will, and all efforts at phonation ended in a hoarse whisper.*

16*th*.—Worse at 3 A. M., complaining of pain referred to bowels, which was readily quieted by small doses of liq. opii comp. (m. iij). At 12 M. cough much softer, pulse 130, temperature 102°.

17*th*.—Had passed a comfortable night. Pulse 130, temperature 101°. On stopping tube, the patient coughed through the larynx with a stridulous but soft sound. A cathartic was now administered, and the intervals between doses increased to three hours. 8 A. M.—The patient had been coughing up mucus and softened membrane since noon, and toward evening began to expectorate it through the larynx and fauces. Bowels had moved twice freely.

18*th*.—Had passed a comfortable night, coughing occasionally and naturally. Was playing about the floor, and so much improved that I ventured to remove the tube. Pulse 120, temperature 100½°. Saw him again at noon, and later at 8 P. M., when I replaced the tube for the night, he having at that time a pulse of 120, and temperature 102°.

19*th*.—Tube was again removed in the morning. Pulse 112, temperature 99¾°. 8 P. M.—Pulse 112, temperature 99½°. Has eaten a soft-boiled egg during the afternoon. Tube replaced.

20*th*.—Beginning to swallow solid food, cough much less frequent and very soft. A slight bronchitis, which had begun to manifest itself, was readily subdued by the ordinary remedies. The child was now put upon tonics, and allowed to sleep without the tube at night. He began to speak in a whisper the following day, and, as the opening in the trachea became occluded by granulations, gradually regained his natural voice.

July 3d.—I was called to see him on account of a swelling which had appeared in the neck. This, which proved to be emphysematous in its nature, disappeared rapidly under the application of pressure made by a pad and bandage for a day or two. The external wound appeared to be entirely filled with florid and rapidly-cicatrizing granulations.

28th.—I opened a superficial abscess which had formed at the right side of seat of scar. This healed rapidly, and the boy is now perfectly well, and in robust health.

The following report is furnished me by Dr. Geo. Atkinson:

Diphtheritic Croup; Operation of Tracheotomy; Recovery.

August 7, 1875.—Called to attend Eddie R., aged eight years; native of the United States. Found patient with high fever, and well-marked diphtheritic exudate on sides and back of throat. Ordered tinc. ferri mur. and potas. chlorat. in full doses.

8th, A. M.—Throat better, fever less. P. M.—Noticed croupy cough, which had come up within a few hours. (On inquiry, the mother stated that the boy had always been croupy, with every little cold, till within a year past.) Ordered ammon. carb. combined with opium and ipecac. in addition to previous treatment; also vapor from slacking lime constantly in the room.

9th, 3 A. M.—Tonsils, etc., clear, but larynx more involved. P. M.—Patient almost *in articulo mortis* from asphyxia. Called Dr. F. W. Rockwell, who performed tracheotomy rapidly while laboring under the double disadvantage of failing light and profuse hæmorrhage from a distended vein unavoidably punctured. After having had to resort to artificial respiration, our patient rallied well. Treatment was changed to quinia sulph., gr. j, every hour; brandy ʒ j—ʒ ij every hour; beef-tea *ad lib.*

10th, A. M.—Had passed a good night; appeared bright, though the wound was covered with diphtheritic membrane, and some new membrane on the tonsils. 1 P. M.—Evidence of disease extending below the tracheotomy-tube; 3 P. M., almost exhausted from labored breathing. Trachea apparently as much or more obstructed by membrane than the larynx was before the operation. Began spraying lime-water directly into the tube from a hand-atomizer. Before an hour had elapsed he began to cough up bits of membrane softened by the lime-spray. Before 7 P. M. had rid himself of a complete cast of the trachea over an inch in length. The removal of this cast had to be assisted by suction through a small catheter; for, while the membrane was wedged against the inner end of the tube, the passage of air was completely shut off, and death was imminent. When once the membrane was fairly caught in the tube, a quick withdrawal of the inner tube brought away the obstruction. From this time on for the next forty-eight hours it was one constant struggle to get away the membrane which formed and reformed in the trachea; also in the pharynx, and on the buccal surfaces, even more extensively than before the operation.[1] The external wound of the operation was a constant index to the state of the mucous membrane within; for, in spraying the lime-water into the trachea, the exudate would be washed off, and, as often as it formed again here, there was a necessity for attending to the exudate in the trachea; when there was no more membrane on the wound, there was no more in the trachea. After the third day from the operation the patient did well, except that the diseased parts became very putrid, which, however, was easily corrected by a spray of the ordinary aqueous solution of salicylic acid. The tube was removed permanently at the end of ten days. The wound closed in twenty-four hours. With regard to the diagnosis of the disease, bearing on the question so much discussed, whether simple membranous and diphtheritic croup are one and the same disease, this case presented all the appearances and gave the history of diphtheria before it became croupous; and from this case myself and all in the house (six or seven people) were more or less affected. I had to treat every grade of the disease, from the worst putrid throat down to a slight tonsilo-pharyngitis without the characteristic exudate. With regard to the treatment, again, iron and potas. chlorat. in full doses up to the time of operation, when it could not be swallowed, then quinine, brandy and concentrated nourishment, etc.; lime-spray locally.

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[1] Have since operated upon a precisely similar case under the care of Dr. Thos. Wilde. Death occurred, five days after the operation, from cardiac paralysis.—F. W. R.

II.—*Case of Concussion of the Brain, with Probable Injury to the Cerebellum, Medulla, and Pons; Rigidity, Convulsions, Mental Alienation; Recovery; Ultimate Impotence, nearly complete.* By W. Hutson Ford, M. D., New Orleans.

C. F., aged forty-two years, farmer, was struck by an athletic wagoner, with the standard of a wagon, over the inferior portion of the occipital bone on the left side, on the evening of November 15, 1872.

This blow was a very heavy one, being fairly delivered with both hands. On receiving it the man fell, and was carried home, speechless and motionless, two hours afterward. The night was very cold. He was put to bed by his friend, who supposed his condition mostly due to drink, although such a supposition was contrary to his usual habits. He was allowed, consequently, to remain in bed, without movement at first, though afterward with occasional rolling from side to side, all that night and the following day.

During the night his feet were badly burned by some bricks, which were hot enough to fire the bedclothes, but which he did not feel or complain of.

Twenty-eight hours after he was struck, I visited him. Respiration profound, regular, 10 per minute; pulse 96, corded and very resistant; temperature normal; no stertor; eyelids and mouth firmly closed; pupils somewhat contracted; tendons at the wrist very rigid; abdominal muscles and muscles generally strongly retracted.

There was no sign of injury whatever at the site of the blow; no discharge of blood or sanious fluid from the nose, ear, or mouth. When loudly and repeatedly addressed, he made no answer; would not put out his tongue, though he seemed vaguely conscious, and somewhat annoyed at being disturbed—signifying this by rapidly turning away from the questioner.

Manipulation of the wounded part elicited some twitchings of the mouth and knitting of the brow, indicative of pain. The brows were depressed and drawn together, the lips pursed and pushed upward to the nose. He would not admit a spoon between the teeth. He was evidently passing from the period of concussive depression into a subsequent one of irritation.

I began, therefore, to administer, every half-hour, pills containing half a drop of croton-oil each. After the third pill, a stimulant-purgative enema was thrown into the rectum, though not without much difficulty, for, as soon as the nozzle of the syringe, or even the finger, touched the anal orifice, the legs stiffened, the pelvis was forcibly thrust forward, and the adductors and glutei so strongly contracted that it was almost impossible to reach the anus. The sphincter itself and levators seemed also to participate in this spasmoid movement, which I regarded as principally reflex, though he seemed dimly conscious. Partly by force I at last succeeded in my object. Within three hours after my arrival his bowels were well moved. The purgation was seconded by warmth to the feet, hot half-baths, cold to the head, and blisters to the extremities. He made no request to go to stool, but rose, in spite of opposition, obviously for that purpose. On attempting to assume the erect posture, he tottered and would have fallen but for assistance, and had to be gradually lowered into the chair, seeming to have difficulty in bending his legs, owing to the manifest rigidity of their muscles. He was evidently somewhat relieved by the action of the purgative.

He now began to take "Norwood's tincture," in seven-drop doses, every hour, for the first three doses, to be continued afterward every second hour until the pulse should be reduced. I left him at daybreak, ordering the veratrum to be discontinued after 10 A. M., but resumed if the pulse acquired more volume—rose above 70—or if there should be any notable rise of temperature, cerebral excitement, or general spasm. I also ordered continuance of cold to the occiput and brow, warmth to the feet, and absolute diet.

I was prevented from seeing him that day befere 10 P. M. At the visit I was informed he had been quiet until 2 P. M., the veratrum having been discontinued at 9 A. M.; that between two and three o'clock in the afternoon he had experienced *three general convulsions;* that immediately after the first access the veratrum had been resumed at one-hour intervals, according to my directions, by his intelligent landlord, and that seven hours had elapsed without further spasm. He was lying on his side; respiration tranquil, pulse 60; eyes closed; facies as already described; the mouth firmly shut. When roughly shaken, and spoken to in a loud voice, he uttered a few unintelligible words in a veiled and tremulous voice. From time to time he cleared his fauces of tenacious mucus, and spat violently forward without opening his eyes; frequently also making a noise indicative of clearing the glottis of mucus. I remained with him through the night, purging him again with croton-oil, and maintaining his pulse with veratrum at about 60 beats to the minute.

The same treatment was followed until November 19th. He now answered some plain questions intelligently, admitting pain and stiffness in the neck. Pulse 56; temperature normal; respiration slow and deep. He frequently cleared his throat, and spat as already described. Soon relapsed, after being spoken to, into a semi-conscious state. I directed the continuance of the veratrum, in six-drop doses—p. r. n.—to maintain the pulse at about 60; a pill or two of croton-oil to be also given.

November 20th.—No convulsions; the veratrum being suspended last night during some four hours, he showed signs of mental excitement and perversion, in an hallucination that his horses and mules were out and that he must go in search of them—maintaining his purpose to do so with extraordinary obstinacy and petulance. On resumption of the veratrum, he soon became quiet again. He had two bloody evacuations during the night. The blisters were kept open with savine. Ordered same treatment in all respects, except the purgation.

Two days afterward, I saw him again. He had been faithfully kept under the influence of the veratrum. The nurse had been directed to regard any muttering, or other sign of mental disquiet, as indicating a dose of the drug, *without reference to the rate of the pulse.* The pulse had oscillated at about 64. This morning the patient rose of his own accord and tottered to the fireplace. Since the previous afternoon he had had paroxysms of troublesome cough, especially at night. Percussion revealed nothing. Diffused sonorous and moist *râles* were heard, but no vocal or respiratory consonation. Pulse 70; temperature normal; respiration 22. His mental state was unchanged. There was barely any sign of blood in his stools. Ordered a grain of calomel every fourth hour; warm applications of dry bran to back and front of chest. Veratrum as heretofore.

November 24th.—The thoracic symptoms are much alleviated. The patient complains of hunger; passes his water himself. Was quite turbulent last night, rising out of bed to seat himself by the fire and refusing to go back again; he is constantly strongly possessed by the hallucination already mentioned. The irritation about the fauces and larnyx persists; he "*hems*" frequently; often clears his throat and spits violently and carelessly forward as stated. Complains of pain and stiffness in the neck, high up under the occiput. The facies is expressive of dejection and weakness; pupils still contracted; the brow frowning; the eyelids half closed; the mouth thrust forward and upward. Passed a seton under the skin of the nucha, close under the occiput. Ordered rigid continuance of the veratrum; nearly absolute diet—a spoonful or two only of mutton-broth being allowed every fourth hour; discontinuance of the calomel.

From this time I continued to attend the case until December 10th. As the mental alienation yielded, the diet was very carefully and gradually improved. The veratrum was faithfully continued day and night, according to the indications, six or seven drop doses, every two hours, during a period of eight or ten hours at a time, being then intermitted for some hours, to be resumed whenever *irritability of temper or restlessness* appeared, quite irrespective of the *state of the pulse.* It was found, however, that, with a pulse-rate varying between 56 and 64, the patient's condition was nearly always very satisfactory, and that he made excellent progress. He *took no morphine or other narcotic or anodyne whatever during the entire period of his treatment.* The muscular rigidity disappeared some days after the introduction of the seton, leaving the patient hardly able to stand from weakness, though muscular coördination seemed quite restored. The *mental alienation* did not finally disappear until about the twentieth day.

Though the veratrum was so strictly maintained during fifteen days, and in occasional doses even after that, there was never any nausea, gastric irritation, or vomiting, nor any thing like *cerebral veratrism.* The feet, badly burned by the hot bricks on the night of his injury, suffered considerable loss of substance eventually. About Christmas the patient resumed his customary employments. He came to consult me on the January following, stating that he had quite recovered his strength, and felt no pain or stiffness in the neck. His digestion and intestinal functions were normally performed. But he further stated to me that ever since his convalescence, though formerly very vigorous, and the father of a large family, he had become *absolutely impotent*, being unable to have even an erection of the penis. Under some advice I gave him, this condition partly yielded to appropriate local and general measures, but he is now, nearly two years since his injury (October, 1874), by no means reëstablished in this respect.

The blow which so nearly killed this man took effect on the nervous masses lying on the base of the skull; its direction was from behind forward slightly upward, and from left to right. The nature of the injury I conceive to have been *contusive* upon the cerebellum, medulla, and pons, by reaction of the hard parts on which these organs rest, involving rupture of some vessel of the meninges, and not improbably a laceration of some of the nervous fibres of the pons or medulla. The earlier symptoms were those of concussion, giving place after twenty-four hours to those of increasing irritation, threatening to pass into inflammation. Indeed, it cannot be doubted that a certain amount of inflammation was really established, which gradually yielded to the medication instituted.

The contracted pupils, bent eyebrows, and pursed mouth, bespoke continued irritation due to some lesion of the medulla. The irritability of the larynx, signified by the frequent clearing of the glottis, and the difficulty of speech, pointed in the same direction. The secretion of viscid mucus in the fauces, provocative of the frequent and violent spitting observed, must be attributed to irritation of the medullary tracts, or the floor of the fourth ventricle, whence the nerves arise making up the pharyngeal plexus. This kind of exspuition I have observed in acute mania, consequent upon venereal excesses, and in *hysteria;* and it is well known to be characteristic of *rabies.* I do not think we can doubt that it constitutes a valuable diagnostic sign of irritation of the nervous centres alluded to.

That the *pons* was injured seems very probable. I am inclined to think some of its fibres were either directly ruptured by *contrecoup*, or secondarily by the burrowing of effused blood, but whether the extravasation was sub-meningeal or interstitial it is somewhat difficult to say. I am disposed to think, however, that there was some impairment of continuity in the fibres of the pons, or of those descending through its posterior portion, in view of the pectoral symptoms developed. Brown-Séquard has shown that injury to this region gives rise to diffused ecchymosis in the lungs. Duguet (Paris, 1872) states that the pulmonary hæmorrhage manifests itself in spots, with or without rupture of the surrounding tissues—from a general consideration of experiments and observations in this direction, more especially of those of Brown-Séquard, who imagined the ecchymosis to be due to irritation propagated from the intra-cranial parts, expressed in a violent peristalsis of the small pulmonary arteries. Notwithstanding, therefore, the absence of *hæmoptysis* in the case, I must unhesitatingly refer the pectoral cough, *râles*, and other chest-symptoms, to a condition of this kind, indicative of injury to the fibres of the mesencephalon. It was shown several years since (1870), by Brown-Séquard, that the injuries to various organs, consequent upon a lesion of the pons at the level of the origin of the cerebral crura, may produce emphysema, congestion, and œdema, with or without hæmorrhage. Even galvanization of the pons and neighboring parts, like mechanical irritation of those nervous centres, produces ecchymosis, the irritation passing downward from the vaso-motor centre in the crura, not through the vagus, but by way of the *sympathetic*, through the cervical cord and the first thoracic ganglia.

Charcot generalizes hæmorrhages from the mucous membrane of the stomach and bowels, under the same antecedent, viz., *irritation*, traumatic or pathological, of the base of the brain. The intestinal hæmorrhage observed in this case should, therefore, perhaps be attributed to the cerebral injury, and not to any direct irritation produced by the ol. tiglii administered.

That extravasation of blood, sub-meningeally, and especially within the parenchyma of the encephalic masses, will give rise to very prompt symptoms of irritation, without distinct coma or sign of compression, must be admitted from the history of many cases of cerebral apoplexy. In certain of these an assemblage of symptoms, viz., muscular rigidity, convulsions, knitting of the brows, contraction of the orbicular muscles of the eye and mouth, and of the pupils, presents itself, clearly significant of *primary irritation*. We see all these, with *profuse salivation*, semination, convulsive expulsion of urine and fæces, and *tetanoid spasm* of the *small intestines*, in dogs maladroitly wounded by cephalo-rachidian puncture, when the stylet, failing to strike the respiratory centre of the medulla, goes astray in its neighborhood. It is consequently probable that an early irritation, perhaps a primary one (masked, however, by the paresis due to concussion), was established in the case of our patient, either by direct laceration of the nervous matter, or by the tearing up of structure by blood poured out from a ruptured vessel, somewhere in a plane passing obliquely upward from left to right, through the cerebellar crura, the medulla and pons to the posterior border of the petrous bone, whose reaction against the blow may have caused the injury to the pons and crus cerebri.

The existence of continued *mental perturbation*, in the form of the hallucination described, seems also strongly indicative of injury to the *cerebellum and medulla*. Cerebral pathology is full of instances tending to demonstrate a close connection between abnormalities of these organs and impairment of the *perceptive*, and consequently of the *intellectual* faculties. It is in some sort here that we may localize the tracts devoted to *emotion*, including the generic sense in a physical way, i. e., so far as the nervous matter of this region is the scene of extensive polar discharges, accompanying *emotion*, and induced by the stimulus of certain states of consciousness in the sensory ganglia, reflected upon them through commissural matter, *the olivary tracts*, *processus a cerebello ad testes*, *processus a cerebello ad medullam oblongatam.* I have adverted, in the notes in this case, to the manner in which the patient, during the first three days of his sickness, suddenly turned away from any one disturbing him, by rolling over precipitately from left to right. In doing so, he appeared to yield to an irresistible impulse, and without any definite manifestation of consciousness. I think the movement should be looked upon to a considerable extent as *automatic*, and dependent upon injury to the pons and cerebral crus, and tuber annulare of the right side. Magendie's experiments have shown that, if the medulla is wounded above a section passing transversely through its axis, about two lines in front of the nib of the calamus, turning or rolling toward the side injured will be observed. The injury, if delivered to the medulla by *contrecoup* from the petrous portion of the temporal bone, must have been on the *right* side—on the side, therefore, to which the patient almost convulsively turned. I never saw him turn from right to left until he began to be conscious.

The functions of generation seem to be distinctly controlled by the medulla, pons, and cerebellum, not only as regards the emotions and sensations associated with their exercise, but with respect to the various acts of a reflex character —such as vascular and respiratory excitement, dilatation of blood-vessels, respiratory spasm, etc. The marked and persistent impotence observed in this case is strong evidence of the normal domination of the nervous organs injured over the venereal act, notwithstanding well-known arguments to the contrary. In some cases of extensive destruction of the cerebellum, there has been a complete abolition of sexual desire.

Dr. Carpenter states, "That either the central portion of the cerebellum, or some part of the medulla oblongata, has a special connection with the generative function appears to be indicated with tolerable clearness by certain pathological phenomena cited" ("Physiology," p. 740).

Hennen mentions the case of a soldier who was rendered impotent by a blow on the occiput.

Beatty cites an instance given by Fodoré, of a man of forty years of age, who remained perfectly impotent six months after exposure to the fumes of burning charcoal, which occasioned a kind of apoplectic condition. Numerous agents, however, are well known to be capable of producing *temporary* impotence. I have known this to result, lasting for some weeks, from the inhalation of chloroform-vapor during some hours at night, the bottle having been accidentally upset in bed by a patient who was taking it of his own accord to relieve pain.

The difficulty of erection, still observed in our patient, now nearly two years since his injury, seems to be of the nature of *reflex paralysis*, where action is directed upon the proper generative motor centres on the cord, through the fibres of the crus cerebri. Supposing the principal seat of injury to have been the intermingled fibres of the pons and cerebral crus (or tuber annulare), a view substantiated by the consideration already urged, and that the lesion consisted in the deposition of a blood-clot within the nervous mass, or in contact with the pons sub-meningeally, or of some contusive laceration of the nervous structures of the parts themselves—the loss of erectile and ejaculatory power would constitute phenomena similar to the *late rigidity* of the muscles of the extremities insisted upon by Todd as supervening after cerebral apoplexy, where cicatricial tissue is formed within the brain, or a blood-clot remains long unabsorbed. In such a case the presence of the abnormal mass would seem to constitute a source of incessant irritation, capable of *inhibiting* the activities of the cell-group of the cord upon which the coördinated reflex movements of the part depend. This would accord well with the view which regards the "system of the basis cruris" (Meynert) as inhibiting the reflex power of the various centres of the *medulla spinalis*. In the case we are considering, such an abnormal inhibition, due to the constant irritation of a contracting cicatrix, or of a fatty, organized, inflammatory product, when addressed to the generative centres in the cord, would tend to repress those reflex discharges so essential to the mechanism of the sexual act.

It is evident, from the progress of the case, that however strongly bloodletting may have been indicated, it could have been really dispensed with. The sedative influence of veratrum upon the circulation, and secondarily, therefore, upon nutrition, inflammation, and secretion, is very satisfactorily illustrated. The remarkable abatement of temperature induced by the systematic administration of this drug, is the effect of the general vascular sedation, which insures the maintenance of a lower grade of nutritive action everywhere. Veratrum is far superior even to bloodletting in this respect, especially in the fact that its use involves no real loss to the economy, but on the contrary affords us, perhaps, the best instance of true conservation of organic force within the resources of therapeutical art.

Nevertheless, during the treatment, I was prepared to bleed, had any difficulty in administering the veratrum occurred, and especially so just before and after the convulsions.

An extended experience with veratrum during eighteen years assured me of its great value in abating and even warding off inflammation, and in controlling hæmorrhage. Hæmoptysis, hæmaturia, metrorrhagia, gastric hæmorrhage, all yield with a facility which it has not been my fortune to experience with any other remedial agents whatsoever. During the late war, I was in the habit of controlling the pulse, somewhat as detailed in this paper, for the purpose of preventing secondary hæmorrhage. In one such case, the exhibition of veratrum, during ten days, at my suggestion, rendered an amputation below the knee unnecessary, which was barely escaped by the patient, and had been decided upon by the attendant surgeon.

Veratrum was prescribed in the present case to prevent further effusion of blood, if blood had already been effused, and later to reduce and mitigate irritation and inflammation. For general command of the patient, as well as for inducing sleep and quiet, I relied wholly upon this drug, no morphine or other narcotic agent whatsoever having been administered.

I think it worthy of suggestion that in cases of apoplexy where phenomena are presented similar to those of the man C. F., viz., where there are convulsions, rigidity, and signs of extravasation and tearing up of brain-tissue, and not compression merely, that we should have recourse at once to *veratrum*, much in the way in which the drug was used in this case, in conjunction, of course, with bloodletting if the patient can bear it. Veratrum would be always admissible where the amount of extravasation or injury, judging by the symptoms, is not hopelessly immoderate, and would be safe in all cases, of any promise whatever, in which bloodletting or strong purgatives are contraindicated.

III.—*Clinical Cases illustrating the Pathology and Morbid Histology of Insanity.* By Edward C. Mann, M. D., Medical Superintendent of the State Emigrant Insane Asylum, Ward's Island, New York.

Case I. *Melancholia with Delusions; Death resulting from Chronic Meningitis.*—C. Mc., male, aged forty-four years, single; occupation, porter. Upon admission, May 5, 1874, was noisy and maniacal. This state lasted but a few days, and he then became depressed and melancholy. He refused food at first, and had to be fed artificially. The melancholy assumed an acute from, and he had hallucinations of sight and hearing, causing at times great terror and mental excitement. At such times, when he imagined that he saw devils in the ward, his face would assume an aspect of the utmost fear and distress. He often expressed a wish to commit suicide. He died quite suddenly, August 25, 1874, having eaten and slept but little for some days previous. *Post mortem:* Upon removing the calvarium, the dura mater was found to be adherent to it; the pia mater was thickened, infiltrated, and hyperæmic; the arachnoid was clouded and covered with granulations; the brain was hyperæmic, and the cortical substance softened; the lateral ventricles were filled with fluid; the lungs revealed commencing tuberculosis; the kidneys, spleen, and liver, were normal.

Case II.—M. H., male, aged thirty-one years, single, and by occupation a laborer. Admitted to asylum January 17, 1874, with melancholy. Had delusions of fear and persecution, and had suicidal impulses; often refused food, saying he wished to die. The mental faculties were very feeble, and the enfeeblement gradually increased. The bladder became paralyzed, and the health gradually failed up to September 25, 1874, when he died from exhaustion. *Post mortem:* The membranes of the brain were found to be adherent to each other, and the pia mater was thickened and adherent to the surface of the brain. Throughout the brain were small miliary tubercles; the substance of the brain was softened near the base; there was also considerable effusion about the base of the brain, and effusion in the lateral ventricles; lungs normal, kidneys congested; spleen, liver, and heart, normal.

Case III. *Melancholia, with Religious Delusions and Hallucinations of Sight and Hearing; Death resulting from Acute Tuberculosis, and Rupture of Pulmonary Artery.*—J. S., male, aged twenty years, single; occupation, laborer. Upon admission, was in poor physical condition, having never regained his strength since an attack of pneumonia some months previous. There were dullness upon percussion at the apices of both lungs, and a prolonged expiratory murmur, with difficult respiration. He was very much depressed and very melancholy, and imagined that he had committed unpardonable sins and should be eternally lost. At night he thought he was visited by evil spirits who tormented him. He continued in this state until October 14, 1874, when he died suddenly. *Post mortem:* Dura mater firmly adherent to the skull; meninges congested and vessels enlarged; brain revealed softening of cortical substance and effusion of fluid in the lateral ventricles. Examination of the lungs revealed the existence of extensive tuberculosis. The upper and middle lobe of the right lung were partially destroyed, and the sudden death was found to be the result of rupture of the upper branch of the right pulmonary artery in the middle lobe of the right lung.

CASE IV. *Dementia and Paresis; Death resulting from Pulmonary Hæmorrhage.*—T. A., male, aged twenty-two years, single; occupation, wagon-maker. Admitted to asylum June 24, 1874. Upon admission, was demented, with symptoms of paresis. Laughed vacantly when addressed, and stared unmeaningly about him. No appreciation of condition or surroundings was manifested by him. His gait was staggering, and lips and tongue were affected with muscular tremors. He never spoke but once, and that was upon the occasion of a visit from his brother. His speech at that time was hesitating, trembling, and characteristic of paresis in an advanced stage. He had an attack of subacute meningitis in October, and died in January, from an exhausting attack of pulmonary hæmorrhage. *Post mortem:* Membranes of brain adherent to each other in places, and dura mater firmly adherent to the skull; slight sub-arachnoid effusion and large effusion between the pia mater and brain; pia mater was thickened in patches. There was also effusion at the base of the brain. There was fluid in the spinal canal, and the spinal cord was atrophied. There was also miliary tuberculosis throughout the brain. Upon making an examination of the chest, the left lung was found to be partially destroyed by the breaking-down of the caseous products of pneumonia, as a result of which large cavities were formed. The heart gave evidence of recent endocarditis. On the surface of the heart and endocardium were miliary tubercles. The walls of the heart were atrophied and exhibited traces of fatty degeneration. Kidneys, spleen, and liver, normal. Upon hardening the spinal cord and making thin sections, and employing carminal staining to demonstrate the structural relation more clearly, there were found to be, upon microscopical examination, atrophy and degeneration of the nerve-elements of the posterior columns, with increase of connective tissue. Sections of hardened brain-tissue being made, there was observable, in the cerebral cells of the frontal convolutions, a diffused granular degeneration. No change could be detected in the cervical sympathetic, which was carefully examined.

CASE V.—M. A. R., female, aged twenty-nine years; occupation, servant. Admitted to asylum Dec. 29, 1873. Form of mental disease, dementia ending in paresis. Speech was slurring and hesitating, her gait was staggering, and her mental faculties very much enfeebled. Would become very angry at trifling incidents and then would relapse into silence, which lasted sometimes for weeks. She suffered from gradually progressing paralysis, which involved the sphincters of the rectum and bladder. The cutaneous and muscular sensibility were impaired, and there was likewise loss of electro-muscular contractility, so that disease of the antero-lateral and posterior columns of the spinal cord was diagnosticated before death. The paresis was attributed to spinal injury received when quite young. She died from exhaustion, March 24, 1874. *Post mortem:* The dura mater was adherent to the cranium; the pia mater was thickened and infiltrated, and the arachnoid thickened and opaque. The convolutions of the brain were atrophied and the brain-substance indurated. There was fluid in the spinal canal, and the cord was slightly atrophied and softened in patches. The heart was small and flabby; spleen atrophied; stomach, liver, and kidneys, normal. The uterus was in a rudimentary condition, apparently never having been developed properly. The spinal cord, after being hardened, revealed, upon microscopical examination, loss of neuroglia and connective tissue and degeneration of posterior columns, and loss of nerve-tubules of white substance. The ganglion-cells of both anterior and posterior cornua were disintegrated and atrophied, and granular and fatty matter occupied their place.

CASE VI. *Acute Mania, passing into Dementia, with Paralysis; Death resulting from Apoplexy.*—J. W., male, aged twenty-seven years; occupation, student. Admitted to asylum April 30, 1873, with acute mania. Upon admission, was violent, requiring the restraint of a camisole. As soon as he was quiet, he showed signs of dementia, and gradually became paralyzed. His mental faculties seemed entirely lost. He did not speak, required to be dressed and undressed and put to bed like a child, and led to the table for his meals, which he took from a spoon, which had to be put in his mouth by an attendant. On the morning of March 27, 1875, he became suddenly comatose and died in a short time. *Post mortem:* Dura mater adherent to skull; arachnoid opaque and thickened; pia mater thickened and infiltrated, and the blood-vessels enlarged and varicose. A varicose vessel had ruptured, giving rise to extensive hæmorrhage, which pressed upon both hemispheres, causing death. Brain was indurated and atrophied; there was effusion at the base of the brain and in the lateral ventricles. Upon examining the lungs there was found to exist a large cavity at the apex of the left lung; stomach, liver, and heart, normal. The kidneys were hypertrophied and undergoing fatty degeneration.

Case VII. *Dementia and Epilepsy; Death taking place during a Succession of Paroxysms.*—O. M. S., male, aged nineteen years, single; occupation, gardener. Admitted to asylum September 29, 1874, with epilepsy associated with mania, which preceded and followed the paroxysms, requiring sometimes mechanical restraint. Dementia soon resulted from the mental deterioration. Patient had epileptic fits nearly every day, which condition had existed for years. He had inherited a predisposition to epilepsy. During the mania he entertained a delusion that he was the Emperor of Germany. The paroxysms increased in frequency and intensity until April 25, 1875, in spite of all medication, when he had a succession of fits lasting thirty-six hours, in one of which paroxysms he died. *Post mortem:* Membranes of brain thickened; arachnoid opaque; pia mater thickened; brain atrophied and indurated; lateral ventricles filled with fluid; spinal cord normal. Upon hardening the brain-tissue and medulla oblongata, and examining microscopically, there was seen to be some vascularity in the fourth ventricle, which extended through the medulla, the capillary vessels of which were somewhat thickened and enlarged. The cervical sympathetic was carefully examined microscopically, but without satisfactory results.

Case VIII. *Paresis and Chronic Meningitis; Death resulting from Exhaustion.*—R. B., male, aged fifty-one years; occupation, music-teacher. Admitted to asylum January 26, 1874. Upon admission, was gloomy and depressed, with exalted delusions, at times alternating with the deepest melancholia. He gradually became more cheerful, but presented the characteristic symptoms of paresis; hesitating speech, slurring all the consonants; staggering gait, muscular tremblings, etc. Had been a very intemperate man, to which the paresis was attributed. He died May 20, 1875, of exhaustion. *Post mortem:* The calvarium being removed, the dura mater was adherent to it, the arachnoid was opaque and the pia mater was thickened and infiltrated, with enlarged and tortuous vessels. There was an effusion of lymph between the pia mater and brain, which had become organized. The brain was atrophied and indurated, and the gray matter of the convolutions much atrophied. There was considerable pigmentation of the cortical substance. The spinal cord was atrophied, and there was some fluid in the spinal canal. The cord being hardened and examined microscopically, there was found atrophy and granular degeneration of the nerve-element of the posterior columns, and a new formation of connective tissue. The membranes of the cord were thickened. The heart, liver, and kidneys, presented at the autopsy extensive fatty degeneration.

Case IX. *Dementia; Paresis and Tuberculosis; Death resulting from Exhaustion.*—M. P., female, aged twenty-three years, servant. Admitted to asylum September 30, 1873. Upon admission was depressed and melancholy, and in a delicate state of health. Became gradually demented and paralyzed. Physical exploration of the chest revealed pulmonary tuberculosis, with cavities at apices of both lungs. Patient died from exhaustion from paresis and tuberculosis, July 18, 1875. *Post mortem:* Brain anæmic, atrophied, and indurated. The spinal cord was about the normal size, its membranes were thickened, and the pia matter opaque and thickened. The lungs presented extensive disease, the heart was small and flabby and the kidneys atrophied and anæmic. Upon hardening the cord, the posterior section of the lateral columns was found to be affected, upon microscopical examination. The posterior columns presented atrophy and disintegration of nerve-elements and plates of connective tissue in different places. In the postero-lateral column were granular tissue and fatty corpuscles, and new bands of connective tissue. It will be noticed that in five out of the nine cases there was pulmonary disease, and, as I remarked in the *New*

York Medical Record of September 18, 1875, in an article on consumption: "It has been noticed that in a great many cases there exists a very close relation between tuberculosis and insanity. Esquirol was the first to note this fact, and it has since been commented upon by Schroeder, Van der Kolk, and Dr. Clonstar. In some cases phthisis has preceded insanity, and in other cases, and probably in the majority of those in which a close relation seems to exist, the development of the two diseases has been nearly contemporaneous. It has been noticed that the forms of insanity complicated with phthisis exhibit a decided tendency to pass into dementia. Dr. Clonstar, in the *Journal of Mental Science* for April, 1863, gives a table showing the form of insanity in 282 patients who died of tubercular disease at the Royal Edinburgh Asylum: Acute mania, 12; mania, 15; monomania, 39; melancholia, 18; dementia, 153; general paralysis, 34. It will be noticed by the foregoing table that more than one-half of these cases passed into dementia, while on comparison of the tubercular with non-tubercular cases, it is shown that only one-quarter of the latter class of cases were demented at death. It was noticed in all these cases that the acute stage of the insanity was of very short duration, and that the patients all manifested a decided tendency to pass rapidly into subacute mania and dementia. It has also been noticed that the prognosis as regards recovery of mental health is very unfavorable, and that apparent recoveries generally prove to be only remissions."

The results of the examinations on diseased brain-tissue made during the past two years have revealed, what has already been noticed by Parchappe, and Griesinger, and others, that in acute or recent insanity the changes occurring in the brain are: hyperæmia of the brain and membranes, thickening and opacity of the membranes, softening of the cortical substance and pigmentation of the cortical gray substance; while the morbid changes occurring in chronic insanity are atrophy of the brain and its convolutions, sclerosis and induration of the brain, chronic hydrocephalus, sub-arachnoid effusions and opacity, and thickening of the membranes. In paresis, which I believe to be essentially a disease of the spinal cord, the lesion consisting of atrophy and degeneration of the nerve-elements of the posterior columns, with, in some cases, a new formation of connective tissue. I have failed to find marked changes in the cells of the ganglia of the cervical sympathetic that can be called distinctive of general paralysis, although in certain cases there is undoubtedly some pigmentary granulation of these cells. This, however, is noticed in other brain-lesions.

IV.—*Acute Pleuritis; Large Effusion, removed by Aspiration; Death; Post Mortem.* By R. B. Bontecou, M. D., Troy, N. Y.

A grocer, aged about fifty years, who had previously enjoyed good health, was attacked six weeks ago with chill, pain in left side, and cough, without expectoration, and did not for some days seek advice, but was treated finally by his medical attendant for pleurisy. December 1st, I saw the man in consultation, and found the whole left chest dull, with absence of respiratory murmur, and measuring one inch less in circumference than the right side, which was clear throughout. There was no bulging of the intercostal spaces. Tincture of iodine externally, with oiled-silk jacket, and a general tonic and supporting treatment were ordered and continued for four or five days, when, no improvement being manifest, large blisters were used and a diuretic containing digitalis. Some relief to the embarrassed respiration and a diminution of the dullness in the upper part of the left chest followed, but as soon as the blister healed the respiration again became very labored, and examination showed left chest wholly dull, and heart to the right of the sternum. Without further delay a large-sized aspirator needle was plunged into the chest between the ninth and tenth ribs, near the angles, and nine pints of inodorous, bloody serum pumped out. Relief to the embarrassed breathing was obtained, but the livid appearance of the countenance, which was noticed before the operation, lasted some days afterward, probably due to interference with the heart's action by displacement.

Two weeks passed, with no return of the dullness, and the cough disappeared, while the patient's general appearance improved, and he was considered convalescent, when a rather sudden recurrence of the difficult breathing and cough took place, accompanied by delirium, and also with anasarca of the lower limbs. The bowels, kidneys, and skin, were acting well, and two-thirds of the left chest were clear on percussion, although no respiratory murmur could be heard. Extract of belladonna and digataline were now given, which improved his circulation and removed the anasarca, but the chest-effusion continued to increase, and the aspirator was again used, December 30th, removing about two quarts of inodorous, bloody serum; very little relief followed, and the man died the following day.

Post-mortem examination forty-eight hours after death showed all the organs of the body to be in apparently a normal condition, except the heart, which was small, with thinner ventricular walls than natural, although the valves were perfect. Right lung large, crepitating throughout, and free from adhesions; left lung and heart pushed into the mediastinal space, and held there by a thick wall of organized lymph, which appeared to surround the left pleura on all sides, but especially thick toward the heart and lung; left lung compressed into a a small, solid, grayish mass which did not crepitate; left pleural cavity was smooth and shining, and contained about half a pint of bloody serum without odor. The place where the chest had been twice punctured was difficult to discover, and was not surrounded by any areola of inflammation. Death appeared to be caused by the embarrassed, feeble heart and the exhaustion from serous effusion.

V.—*Rare Obstetrical Case; Presentation of Four Hands.*

By George C. Stiebeling, M. D., New York.

November 14, 1875, I was called to see Mrs. M. S., aged twenty-four years, secundipara. Had been in labor for about five hours. No pains at present. On examination I felt through the bag of waters what later I could discern distinctly as hands. As the os uteri was dilated well enough to allow the introduction of my hand, I resolved to perform version and extraction. On breaking the bag of waters, I met two hands, and going a little higher up in search of a foot I met two more hands. Of course I was puzzled somewhat at first, but soon make up my mind that I had to deal either with a twin case or a monstrosity. Soon I found two heads, one to the right and the other to the left. I now got hold of a foot, brought it down without difficulty, and extracted one child, a boy. The second one was delivered in the same manner, also a boy, both crying lustily. Mother and children are doing very well.

Notes of Hospital Practice.

ROOSEVELT HOSPITAL.

Strangulated Hernia; Attempt at Reduction by Means of the Hand in the Rectum.—There have been, since the 1st of November, in this hospital the unusual number of five cases of strangulated hernia. In two of them the attempt was made to obviate the necessity of an operation by reduction, influenced by means of the hand in the rectum, but in each case it was unsuccessful.

The cases in brief are as follows:

CASE I.—A man had an old case of irreducible hernia which became strangulated. The tumor was the size of a child's head. At the operation the stricture was found to be at the neck of the sac, and caused by a band of adhesions. The hernia consisted of a portion of the small intestines—the vermiform appendix, and the head of the cæcum. There was only a deep congestion of the gut. Recovery took place without any unfavorable symptoms.

CASE II.—The patient had a congenital hernia, and latterly it became strangulated. In this case the hand was introduced into the rectum and the hernia detected without difficulty, but it was not reduced because the operator—Dr. H. B. Sands—was unwilling to make sufficient traction to dislodge it.

It was then decided to cut down on the hernia, and when that was reached the sac was opened and the stricture was found at its neck.

The right testicle was found in the sac, but the left was situated in the groin.

Case III.—This was an inguinal hernia on the right side. Reduction was attempted by introducing the hand within the rectum, but without success.

The contraction of the rectum upon the hand was so strong that it prevented the necessary exploration from being made. The sac was then cut down upon and found to contain omentum, but no intestine. Recovery took place rapidly.

Case IV.—A man aged sixty entered hospital with a strangulated femoral hernia. Reduction was accomplished in six hours by means of ice, accompanied by flexion and abduction of the thigh.

Case V.—A patient was taken into the ward in a moribund condition, suffering from a double inguinal hernia. It was not considered desirable to operate, and shortly afterward the patient died. The only history obtained was, that the patient had been ill for three days, and it is supposed that the strangulation had been of that duration. At the autopsy the intestines were found perforated. There were also evidences of general peritonitis.

Dislocation of the Head of the Tibia forward.—A rare case of dislocation of the head of the tibia has recently been under treatment. The injury was received by a force acting directly from behind. There was no fracture of the patella nor rupture of the ligament of the patella. The dislocation was readily reduced, and after a week the extremity put up in a water-glass bandage. Eight weeks after the accident the patient had so far improved as to walk about with but little difficulty, and with considerable motion of the knee-joint.

Rupture of the Kidney.—A boy was caught between the wheels of a wagon and received a severe crushing of the abdomen. There were no signs to indicate any special lesion. Death occurred in twenty-four hours. At the autopsy there was found to be rupture of one of the kidneys.

BELLEVUE HOSPITAL, NEW YORK.

Report of Case of Ununited Fracture of Radius and Ulna.—The case of fracture of radius and ulna which was reported in the last number of the JOURNAL has so far yielded a fair result. When the plaster-dressing was removed complete solidification had not taken place, though the case was very much improved by the operation. It is supposed that gradually the callus will become firmer, without any further interference.

Gunshot-Wounds.—A patient was taken into hospital after having endeavored to commit suicide by discharging into the chest, near the shoulder-joint, the contents of a gun loaded with buck-shot. A wound was discovered three inches below the clavicle, into which the charge of shot had entered. This wound was four inches in diameter and four or five inches deep. The point of interest in the case was that, although the particles of shot entered the axilla in the region of the last portion of the subclavian and first portion of the axillary arteries, none of the important vessels were injured. At the present time the wound is suppurating freely.

Conversion of a Simple Comminuted Fracture into a Compound Comminuted Fracture by Sloughing.—A man had his leg run over by a street-car, and on entering the ward was found to have a simple comminuted fracture of the femur. Five or six days afterward sloughing took place and converted the case into one of compound fracture. It was treated by means of Buck's extension. It is interesting to note that in a street-car fracture, with such an immense amount of contusion, there should be no injury to the skin.

Solution of Bromine as Dressing.—A valuable stimulating application is obtained by dissolving two drachms of bromine in a pint of water. The use of bromine in a dilute form is rather a novel method, and it seems to offer some advantages.

ST. FRANCIS'S HOSPITAL.

Report of a Case.—The case of perforation of chest-wall from phthisis, reported in the last number of this JOURNAL, has since died. A cavity was found in the lung about the size of a hen's-egg, and at a point between the first and second ribs it had opened. The pleura was adherent around the edges of the perforation, but in no other place. A broad sinus extended from the point upward over the clavicle, and downward below the pectoralis major muscle. Caries of the first and second ribs was noticed immediately around the perforation.

Treatment of Acute Rheumatism by Means of Packing with Carbolic Acid.—Several cases of acute rheumatism have been satisfactorily treated by means of packing with blankets wrung out of a very dilute solution of carbolic acid. The treatment is, in reality, a modification of the method practised at the Mount Sinai Hospital, and reported some few months ago. The method consists in adding an ounce of carbolic acid to a pailful of warm water, and saturating blankets with the solution before applying them. Marked relief follows the application.

Treatment of Dysentery with Salicylic Acid.—Cases of acute dysentery have been treated satisfactorily by means of doses of thirty grains of salicylic acid administered three times a day. The only objection to the remedy appears to be a slight irritation of the stomach, but this is not sufficient to cause emesis.

MOUNT SINAI HOSPITAL.

Metrorrhagia; Treatment by Means of the Galvano-Caustic applied to the Inside of the Uterus.—A patient developed persistent flow of blood from the uterus after an abortion, which was unsatisfactorily treated by all the ordinary agents. Persulphate of iron applied to the lining membrane of the uterus proved but of little benefit. Dr. A. Jacobi proposed to use the galvano-caustic apparatus, and found that after its use the metrorrhagia ceased. Previous to this the hæmorrhage had continued for eight weeks, and debilitated the patient to a marked degree.

Abnormal Increase of Temperature.—A patient has been under treatment in this hospital for the past seven weeks, and has exhibited an elevation of temperature which is seldom noticed. The history is as follows: A German woman, aged twenty, was attacked seven months ago with convulsions. She was under treatment by an irregular practitioner before entering the hospital. The treatment consisted in freely bleeding the patient from the arm at short intervals. When she came under observation at the hospital, it was supposed that the convulsions were of an hysterical character, and for this purpose the strong induced current was applied. Some time afterward she noticed an hyperthesia of the hand, which extended upward, and by degrees involved the arm, shoulder, and side. The temperature was then taken in the rectum, and found to be 110° Fahr. This high temperature lasted only for a very few hours, and then subsided to 99° and 100°. At first it was supposed that the apparent high temperature was due to some imperfection of the thermometer, but with different instruments the same result was obtained. It has been found that the marked increase of temperature occurs with an attack of pain. The diagnosis that has been made is of meningitis affecting the basilar portion of the brain or upper part of the medulla oblongata.

Pericarditis; Treatment by Means of Ice-Bags.—A boy, fourteen years old, has been suffering from acute rheumatism. A complication of pericarditis and endocarditis resulted. The treatment pursued has been the application of ice-bags to the chest, over the region of the heart.

CHARITY HOSPITAL.

Treatment of Burns.—In the treatment of burns, when of a superficial character, a preparation consisting of two parts of collodion and one of olive-oil has been found to be very efficacious. When the burn is of an extensive character, gasoline proves of decided benefit. The advantage of gasoline is, that it is of the right consistence, and does not become rancid.

Chronic Cystitis treated by Perineal Section.—A patient with syphilis has been suffering from hemiplegia. During the past year cystitis has developed. The patient does not complain of much pain, but there is a large amount of mucus discharged with the urine. Dr. J. W. Howe proposed to try the advantage to be derived from perineal section, and for this purpose cut down upon the staff in the usual manner, and then dilated the neck of the bladder by means of Molesworth's dilators. Since the operation the patient has done quite well. The bladder can be washed out without difficulty, and at the same time time very thoroughly. No stone was detected at or before the operation.

Perineal Abscess following Gonorrhœa.—A patient entered hospital with a gonorrhœa which had yielded to treatment without injections. The patient complained of piles on admission, but on examination no piles could be detected. On the following morning, however, a large tumor was found in the perinæum, which, on being opened, discharged pus freely. It seems probable that this rapid swelling was due to a certain amount of extravasation of urine, as it would be difficult under other circumstances to account for it.

NEW YORK EYE AND EAR INFIRMARY.

Loss of Sight from Small-Pox.—The following case is of interest, in proving a disputed point—that injury to the eye may result from the appearance of a variolous pustule on the cornea, as well as from the complication of conjunctivitis and corneitis during the progress of small-pox:

During last summer a man, aged twenty-six years, contracted confluent small-pox, from which he recovered. One of the pustules appeared on the right eye and formed an ulcer which involved and cut through all the coats of the cornea, but left untouched the lining membrane of the aqueous humor. Eventually this membrane burst, and there resulted a prolapse of the iris, terminating in atrophy of the eye.

Removal of an Eye from Sympathetic Irritation.—A young man had his right eye injured ten years ago by a piece of steel, which could not then be removed. From that time more or less irritation was complained of, but within the last three years the difficulty has increased. Latterly the sound eye has developed a sympathetic irritation, and to check it the removal of the injured eye was considered necessary.

Secondary Glaucoma improved by Removal of Lens.—Three years ago a woman, thirty-five years of age, received a blow on the right eye, which caused dislocation of the lens into the anterior chamber. After the immediate effects of the injury had disappeared, the patient had vision, but the myopia was so great that the eye was practically useless. On one occasion the patient exposed herself to cold and contracted a secondary glaucoma. Five days after the onset of the glaucoma the lens was removed. The operation combated successfully the glaucoma, and, after it was recovered from, the vision was found to be equal to what it would have been had the lens been removed from any other cause.

Proceedings of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 8, 1875.

DR. FRANCIS DELAFIELD, President.

Rupture of Heart.—Dr. R. E. VAN GIESEN, of Greenpoint, presented to the Society a heart showing rupture of the left ventricle. The history of the case was interesting as affording a premonitory stage. It was, briefly, as follows: A man sixty-five years of age was seized with sudden vertigo on November 23d, after suffering from severe grief for the loss of a near friend. Two days after, Dr. Van Giesen saw him; he was then having an attack of nausea and vomiting, accompanied with pain in the chest. Previous to this he never had been sick during his life. During the evening of the day in which the doctor saw him he was very comfortable, and continued so till one o'clock in the morning. At that time, while urinating, he sprang from his bed and dropped dead. The autopsy was made thirty-three hours after death. All of the viscera, with the exception of the heart and aorta, were healthy, with the exception of the liver, which was fatty, and extended up to the border of the third rib. The pericardium was half filled with fluid blood. The right ventricle was very thin, and at a point near the septum there was a rupture about an inch in length. From a superficial examination it would seem as if the wall of the heart had undergone fatty degeneration. It was referred to the Microscopical Committee for report. In answer to the question of Dr. Van Giesen as to what was the cause of the preliminary trouble, Dr. DELAFIELD said that cases occur in which the rupture is gradual and oblique. In cases of such a class there are premonitory symptoms, but in the case presented there were no evidences of such a condition. Dr. Van Giesen said that when engaged in the naval service he saw, personally, the death, from cardiac rupture, of Ripley, a distinguished gunner. While Ripley, in asking for a chew of tobacco, reached out his hand, he dropped dead. At the autopsy the rupture was found on the anterior surface of the ventricle. The wall of the ventricle was as thin as tissue-paper. The pericardium was completely filled with coagulated blood, forming a perfect cast of the heart and pericardium.

Dyspnœa from the Falling of a Tooth into the Trachea.—Dr. VAN GIESEN also presented a tooth, with the following interesting history: The patient was recovering from an attack of typhoid fever, and suddenly was taken with an attack of extreme dyspnœa. By the time the doctor reached the patient he was recovering. The lungs and larynx were examined, but no sign of trouble could be noticed. By the next morning he had completely recovered, but an hour after the visit the paroxysm had again returned. Dr. Van Giesen suggested that a crumb of bread had accidentally dropped into the trachea, but the friends said that he had not eaten any bread for some time. During the day, in a paroxysm of coughing, he expectorated one of the molar teeth. The only possible explanation of its finding its way into the trachea was to suppose that this tooth was very loose, and, during sleep, had dropped through the chink of the glottis.

Diphtheritic Inflammation of Larynx and Trachea.—Dr. ANDREW H. SMITH presented the larynx and part of the trachea which he had obtained from a patient who had died of diphtheria. The history was as follows: A physician of this city, aged thirty-three, was taken with diphtheria. For the first three or four days of the disease, no treatment was pursued, as the case presented no symptoms of gravity. By degrees, however, the larynx became invaded, and, at the end of ten days, he suffered from extreme dyspnœa. At his urgent request tracheotomy was had recourse to. The operation relieved the dyspnœa, but in a few hours he sank and died of exhaustion. The autopsy was partial, the larynx and part of the trachea only being obtained. The diphtheritic membrane extended into the trachea, and it was suspected that the bronchi were also invaded.

Dr. Beverly Robinson wished to know, from the members of the Society, what was their experience in regard to the swelling of the glands of the neck in toxic diphtheria. He found that the authorities were divided—some declaring that it was an extremely unfavorable symptom, and others the reverse. Dr. Van Giesen said that he had seen a good deal of diphtheria, and found that the largest number of fatal cases occurred in patients who had no swelling of the neck. Dr. Sandford coincided with Dr. Van Giesen. He said the subject was specially considered by the Kings County Medical Society, and the conclusion arrived at was that when the neck swelled the prognosis of the case was considered more favorable than in cases in which it did not. Dr. A. L. Loomis was of the same opinion as Dr. Van Giesen.

Obliteration of the Frontal Sinus.—Dr. Smith also presented a dissecting-room specimen which had been furnished to him by Dr. Kelsey. The specimen showed complete obliteration of the frontal sinus.

Pedunculated Tumor of Thigh.—Dr. Sell presented a tumor of the thigh, with the following history: The patient (an unmarried lady of fifty-seven years of age) noticed for the first time, about fourteen years ago, a small pedunculated tumor, about the size of a pea, situated on the outer aspect of the thigh. From that time it began to increase steadily in size. Ten years ago it was the size of a hen's-egg; five years ago it had reached the size of the closed fist. During the past year the development had been more rapid, and, at the time of removal, weighed three pounds. Three days before the operation a portion of the tumor showed signs of sloughing. Dr. DELAFIELD said the growth was of the variety described by Paget as fibro-cellular tumor of the thigh.

Scirrhus of Breast.—Dr. SELL also presented a small specimen of the right breast, which he had removed from a patient aged fifty. The patient was married at forty-five, and had a child at forty-six. Twelve years ago she noticed a retraction of the nipple, with a tumor of the breast, but it was only very recently that the glands of the axilla became involved. The tumor proved, on examination, to be an ordinary specimen of scirrhus.

Death from Ether.—Dr. FINNEL presented the larynx of a patient who recently died at the Homœopathic Hospital while being operated on for the removal of a necrosed portion of the superior maxilla. The only abnormality noticed in the specimen was œdema of the larynx. The history of the patient was, that he had suffered from necrosis of the maxilla, and it was determined to remove the sequestrum by operation. After having etherized the patient sufficiently, an incision was carried through the lip, and extended in a semicircular direction over the upper jaw. When the operation had proceeded thus far, the patient became cyanosed and died. It was suspected that blood had passed into the trachea, and to remedy this the patient was held up by his heels, but without effect. The time from commencing the administration of ether till death ensued was ten minutes. The amount of ether used was two and a quarter ounces. At the autopsy, no trace of blood could be discovered in the trachea. The heart was fatty, and weighed six ounces. No lesions could be discovered in any of the other viscera. A strong smell of ether was discoverable in the brain. The anæsthetic employed was the purified ether manufactured by Dr. Squibb.

Chronic Endocardial Ulceration.—Dr. FINNEL presented a heart with chronic endocarditis, accompanied by rupture of one of the aortic valves. The special interest of the case arose from a discussion among members of the Society as to what was and what was not to be considered as typhoid fever.

The history that Dr. Finnel recited was that the patient, a policeman, aged thirty-eight, took ill with fever three weeks before his death. He complained of chills, followed by fever; but, beyond the febrile symptoms, nothing could be detected. The autopsy showed chronic endocarditis with atheroma and rupture of one of the aortic valves. There was an old pleurisy on the left side, but in the intestinal tract no lesions of typhoid fever were observable. The burial-certificate was signed "typhoid fever," in lieu of a better diagnosis. Dr. Finnel asked the opinion of the Society as to whether signing a certificate under such circumstances was justifiable.

Dr. LOOMIS said that the fever, in his opinion, was not typhoid, but remittent. He was of opinion that, unless there were enteric lesions, the diagnosis of typhoid could not be sustained.

Dr. DELAFIELD said that we see a good many cases now of fevers running for two or three weeks, but they are not typhoid.

Dr. HEITZMAN said that typhoid fever can exist without intestinal lesions, and instanced cases that have been reported in Europe. Dr. Delafield agreed with Dr. Heitzman in regard to the cases mentioned, but was of the opinion that it was unsafe to make a diagnosis without intestinal lesions.

Dr. Loomis said that, in typhoid, we must rely for our diagnosis on the eruption and on the diarrhœa. After a patient has been ill for five or six days the temperature of typhoid and remittent fever does not vary; both may have tympanites and diarrhœa, and when the remittent assumes the typhoid type it is exceedingly difficult to draw the dividing line. The eruption, however, they did not have in common, and upon that the diagnosis must chiefly rest.

DR. VAN GIESEN said Dr. Loomis would lead us to suppose that we could not have typhoid fever without the eruption and the diarrhœa. His observations did not coincide with those of Dr. Loomis, for he had found many unmistakable cases where neither one nor the other was noticed. In his opinion the thermometer proved itself a valuable aid in clearing up the nature of a case. Some cases of typhoid appear to be complicated with malarial fever, for in the progress of the fever he has found the temperature rise to 107°, and then fall without any accident, such as perforation. He thought he had found this complication in about twenty cases.

Dr. A. H. Smith had seen during the war a distinct group of typho-malarial fever. Dr. Van Giesen said that he had seen the cases referred to by Dr. Smith, but they were not of the same class as those to which he referred.

Scirrhus of the Breast.—Dr. Finnel presented a scirrhous tumor of the breast which he had removed from a married woman aged thirty. Eight months ago the breast grew painful, and the axillary glands enlarged. There was no retraction of the nipple, but the patient complained of much pain. During the operation there was very little hæmorrhage, and afterward the wound healed up kindly. The entire gland was involved in the disease. Dr. Finnel asked the opinion of the Society as to the best method of treating patients with cancerous breasts. He had three cases at the present time under observation, and was puzzled whether to operate or not. He said that the late Dr. Kearney Rodgers told him once that, in his experience, he had removed about a bushel-basket of cancerous breasts, but did not think he should ever do it again. Dr. Sell said that the statistics were in favor of operation.

Dr. A. H. Smith said that it depended on the fact as to whether or not the system was infected with the disease. If the disease were local, an operation would undoubtedly prove of benefit; but, if the system were involved, the operation could only prove of doubtful benefit.

Glandular Formation in the Stomach.—The President, Dr. Delafield, presented a transverse section of the wall of the stomach, showing either a congenital or new glandular formation, which he had found to exist between the mucous and muscular layers. The patient was a man who had died of chronic Bright's disease. The coats were very much thickened, and, on close examination, the glandular elements could be discovered in the transverse section by the naked eye. It could only be considered as a curiosity. There were only two or three similar cases recorded.

Stated Meeting, December 22, 1875.

DR. FRANCIS DELAFIELD, President.

Sarcoma of the Finger.—Dr. T. E. SATTERTHWAITE presented a specimen of sarcoma of the finger with the following history: Mrs. H., aged fifty, noticed, last June, that on one of the fingers of the left hand a small mass of soft granulations appeared, which she supposed to be "proud flesh." During September the tumor increased to the size of a nutmeg. Dr. Satterthwaite removed the finger at the middle of the first phalanx, and found, on making a longitudinal section, that the growth extended down to the bone, and was fan-shaped in structure.

The specimen was of the spindle-celled form of sarcoma, and contained within it new bone. Dr. Satterthwaite said that this variety was the least likely to return after removal, but it was of interest from the rapid growth which it made, and also the unusual place of occurrence.

Dr. DELAFIELD said that he had frequently seen it make its appearance on the toes.

Dr. BRIDDON had removed the affected toe in one case of sarcomatous tumor. The patient died one year after, but there was no sign of the recurrence of the disease.

Pulmonic Consolidation; Aneurism of the Aorta.—Dr. A. L. LOOMIS presented a rare specimen of consolidation of the lung, resulting from pressure on the bronchus by means of an aneurism. The history was briefly as follows: A Scotch sailor, aged thirty-three years, entered Bellevue Hospital, November 30, 1875. He had contracted syphilis thirteen years previously, and, although he had been treated with mercury and the iodide of potassium, the disease reappeared at intervals. Three years ago he received an injury on the left breast caused by a weight of three hundred pounds falling on him, and since that time had been addicted to stimulants. Last February he complained of a cough, which lasted till July. The sputa which he expectorated were chiefly composed of glairy mucus and muco-pus. Three weeks before entering hospital he spat up a small amount of blood of a bright color. Six weeks before admission he complained of a sharp lancinating pain in the left chest. On admission he suffered from a malarial attack, which soon yielded to quinine. The temperature was nearly normal. Shortly after entering hospital he spat up a mouthful of blood, and was much troubled with a cough of a bronchial character. An examination of the chest revealed a flat or nearly flat percussion-sound over the left chest, also diminished respiratory motions on that side. On auscultation no respiratory sound could be detected, with the exception of bronchial breathing in the interscapular space. On listening carefully, Dr. Loomis detected a bruit in the same region, but it could not be heard at all times. The physical signs pointed to pleurisy with effusion on the left side; but it was found that the heart was not displaced, and this led Dr. Loomis to diagnosticate it as a case of pulmonic consolidation due to pressure on the left main bronchus. The general condition of the patient remained unchanged from the time of admission up to his death, a period of nearly two months. Death took place from a hæmorrhage of about two quarts. The night before he died he said that he felt better, and proposed on the following morning to leave hospital.

Autopsy.—The left lung was thoroughly consolidated, and closely resembled the appearances found in the third stage of pneumonia. The heart was normal. The aorta was atheromatous, and at the point where the left bronchus passes under it a fusiform aneurism was found, which had pressed on the bronchus and obliterated its calibre. The aneurism had ruptured into the bronchus, and in it there was found a well-organized clot. The aneurism was of about the size of a hen's-egg. Dr. Loomis said the reason he made the diagnosis in the case presented was from the fact that he failed to do so in a similar case which had previously been under his observation.

Dr. SULLIVAN said that he had met with a case somewhat similar, in which the first symptom noticed was difficult deglutition.

Dr. DELAFIELD said that the specimen of lung closely resembled chronic phthisis, but it was not sufficiently recent to appear in its proper state.

Ileo-cæcal Abscess.—Dr. DELAFIELD presented a case of ileo-cæcal abscess of considerable interest from the fact that, although the patient had been under the observation of many physicians, no correct diagnosis had been made. The history of the case was as follows: A woman, aged thirty-nine years, entered Roosevelt Hospital October 1, 1875. She said that she had been in good health till two months before admission, and at that time was taken with vomiting, which lasted three days. Menstruation appeared shortly afterward, and continued for a period of three weeks. This was accompanied with pain in the lower portion of the abdomen, but when menstruation ceased the pain disappeared. One month before admission she began to complain of chills, which lasted for one week. After these ceased, nausea and vomiting continued till five days before admission, when tenderness of the abdomen manifested itself. When the patient was examined on admission, there was pain in the epigastric and iliac regions. The pulse was 120, respirations 36, and temperature 102½°. Shortly after admission her condition improved, though she still complained of night-sweats. On examining the abdomen a lump was found under the liver, which caused considerable pain to the patient. The only relief to be obtained was by sleeping on the affected side. On October 28th a diagnosis of fecal impaction was made. On November 20th considerable pain was complained of in the region of the right kidney, and on examining the patient a double murmur was noticed, near the spine, in the lumbar region. A second diagnosis was now made, of abdominal aneurism. No change took place till November 29th, when œdema of the legs manifested itself, accompanied by thrombus of the left iliac vein. Shortly after this an abscess appeared in the femoral region, and the next diagnosis made was caries of the spine, with psoas abscess. On December 8th a soft tumor appeared near the edge of the left kidney, which gave evidences of fluctuation. A diagnosis was then made of post-renal abscess. After this the patient improved very much, and on December 21st a diarrhœa set in, which was accompanied by the entire subsidence of the tumor. It was deemed probable that the fluctuating tumor emptied itself into the intestines, and in this manner caused the diarrhœa. On December 27th pain appeared near the anterior spine of the ileum, accompanied by a fluctuating tumor. This abscess broke externally, and it was then thought it was due to caries of the vertebræ. On February 21st an abscess again formed, and evacuated itself by means of two external openings. These were supposed to be connected with the intestine, from the passage of fecal matter. Afterward the abscess closed up and the patient improved very much, and then the diagnosis of perihepatitis was made. Eventually the patient died.

Autopsy.—The lungs showed signs of chronic phthisis. The liver and kidneys were in a state of amyloid degeneration.

The abdominal cavity contained some clear serum. The peritonæum contained nodules, but there were no adhesions. The intestines were in a state of chronic catarrh. The caput coli was bound down and adherent. A small opening extended from the cæcum to a small cavity below. This cavity was empty, but from it there ramified a number of sinuses, but no pus. The case, therefore, was one in which an abscess developed behind the cæcum, and before death underwent a process of cure.

Dr. Delafield said that the most extraordinary thing about it was the length of time that it had been under observation, with different medical attendants, and the failure to make a correct diagnosis.

Dr. Loomis was of opinion that the difficulty rested with the imperfect early history of the case.

Fibroma of the Arm.—Dr. Post presented a fibrous tumor of the arm, which was so deeply imbedded that a portion of the contiguous muscles had to be removed with it.

Tubular Sequestrum of Femur.—Dr. Post also presented a rare specimen of tubular sequestrum removed from a patient who had been for a length of time under observation suffering from osteo-myelitis.

Stated Meeting, January 12, 1876.

DR. FRANCIS DELAFIELD, President.

Malignant Tumor, involving One-Half of the Lower Jaw.—Dr. Erskine Mason presented, on behalf of a candidate, a specimen of malignant disease of the lower jaw. The history was as follows: A man aged fifty-seven, who had previously been in good health, suffered from a carious tooth. The tooth was extracted, and in a day or so afterward a fungous mass sprouted up from the socket. One month from the date of the removal of the tooth, the disease had made such progress that the lower portion of the face on the diseased side was greatly enlarged. It was decided to give the patient the benefit of an operation, and for this purpose an incision was carried down, and one half of the jaw removed. The patient did well till the third day after the operation, when death suddenly ensued from dyspnœa caused by œdema of the glottis. On examining the jaw which was removed, it was found to be irregular in contour, and very much enlarged.

Pseudo-Lykæmia.—Dr. E. G. JANEWAY presented the mesenteric gland of a patient who had suffered from pseudo-lykæmia. The history was that the patient, a man twenty-six years of age, had been in good health till two years ago, when he noticed that the glands in the axilla increased in size, and became painful. Shortly after this the cervical glands became involved, but on examining the blood no increase of white corpuscles could be discovered.

Eventually the patient died of exhaustion, suffering from pseudo-lykæmia. At the autopsy it was found that the lymphatic glands were increased in size. The mesenteric glands were very much enlarged, some of them being the size of a pigeon's-egg. When a section of them was made, no cheesy matter could be discovered.

Softening of the Brain; Embolism.—Dr. T. E. SATTERTHWAITE presented the brain and lungs which he removed from a patient under the following circumstances: The patient came under observation November 17, 1875. Two days previous he complained of severe headache, and on the following day took a cathartic. Late in the evening he had a convulsion, and on the following day was found to have paralysis of motion and sensation. The pulse was slow and full. On the following day he became conscious.

November 24th.—The lungs were examined, and found to present signs of crepitation posteriorly.

25th.—Patient complained of pain at a point to the right of the sternum, accompanied by a cold sweat and general signs of collapse, from which he rallied. On November 28th, December 10th, December 15th, and December 20th, similar attacks appeared, and eventually the patient died.

Post-Mortem Examination.—The heart was hypertrophied on the left side, but only slight change was detected in the valves. No vegetations were found in the aortic valves. The right lung was adherent, and contained a large infarction. The meninges of the brain were congested. The brain itself was soft, and over the middle lobe of the right side fluctuation could be discovered. The vessels of the base of the brain were atheromatous. The middle cerebral artery was found to be occluded, the occlusion extending far into the fissure of Sylvius. On examining the brain, the softening was found to extend to the floor of the lateral ventricle.

Dr. Janeway said he wished to put on record a case of softening of the brain, which had been under his observation. His reason for so doing was that a medico-legal opinion had been offered in this city to the effect that no case of softening of the brain could live longer than four years. The case he referred to was one in which softening had resulted from an embolus. The patient lived eight years, and the diagnosis of the case was verified by an autopsy.

Circoid Aneurism of Inferior Maxillary and Inferior Dental Arteries; Operation; Death.—Dr. Peugnet presented a specimen of aneurism, and read a lengthy history of the case, of which the following is an abstract: A girl, twelve years old, noticed that her face began to swell, and after two or three months hæmorrhage took place within the mouth, in the neighborhood of the molar teeth. This was controlled by means of a compress saturated with persulphate of iron, but at short periods the bleeding would return. It was proposed to ligate the external carotid. The operation was performed successfully, but after ten or eleven days secondary hæmorrhage took place. From this the patient rallied, but periodically the bleeding returned. It was then decided to ligate the external carotid on the other side, but during the operation very copious hæmorrhage took place from the mouth, and was only restrained by means of a compress saturated with a solution of the persulphate of iron. A few hours after the operation the patient sank and died.

Autopsy.—Only a partial examination was allowed by the friends, but from what was seen it was supposed that there was an aneurismal condition of the inferior dental and inferior maxillary arteries. Dr. Peugnet said that a point of importance in the medical history of the case was, the advantage derived from veratrum viride and digitalis in checking the hæmorrhage by lessening the action of the heart.

Calcified Cyst ; Atheromatous Vessels.—Dr. FINNEL presented a calcified cyst removed from the neck of a man. The patient attributed its presence to the friction of the collar of the shirt.

Dr. Finnel also presented a portion of the abdominal and iliac arteries, showing extensive atheromatous degeneration. The patient died suddenly, and the only probable cause of death was a calcification of the coronary arteries. The immediate result of the change in the coronaries was dilatation of the heart from defective nutrition of the fibre, and the direct cause of death in all probability was distention, with inability to contract.

Spina Bifida ; Treatment.—Dr. GIBNEY presented a specimen of spina bifida which was of interest from the treatment pursued and the results derived from it.

The tumor was inclosed in a translucent capsule, and in it could be seen the ramifications of the vessels. The treatment consisted in puncturing the sac with an hypodermic needle and removing half an ounce of colorless fluid. The day subsequent to the operation the patient refused the breast ; but after a few days was as well as ever. The operation of tapping was performed three times, and about an ounce and a half of fluid removed at each operation. As a result of this treatment the tumor diminished in size ; but, after the last evacuation of the fluid, twitchings appeared, and shortly afterward the patient died. An examination of the sac showed it to have nervous trunks distributed over its walls. The spinous processes of the vertebræ were deficient at the site of the tumor, as is usually found in cases of spina bifida. The cranial sutures were also imperfect.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, December 27, 1875.

Dr. Henry B. Sands, President.

The Effect of Treatment upon the Blood in Syphilis, as shown by the Hémitimètre.—Dr. Edward L. Keyes exhibited to the Society the *hémitimètre*, and explained the manner of using it. An illustration and explanation of it may be found in the *Journal of Medical Sciences* for January, 1876. The purpose of the instrument is to estimate the number of blood-corpuscles in a given cube, and by repeated observations to notice whether the number increases or decreases.

Dr. Keyes, in the course of his remarks, advanced the view that syphilis was best treated by means of doses of mercury sufficiently small to fail to bring out the specific effect of the drug. He was of the opinion also that it might be necessary to continue this method of medication for two years. The advantages claimed were, that in this way the disease might be practically eradicated, and never exhibit more than one general eruption.

Dr. F. J. Bumstead questioned whether the observations recorded in Dr. Keyes's paper, in regard to the effects of mercury in healthy patients causing an increase of weight, could be thought of direct value in the consideration of patients suffering from syphilis. Dr. Bumstead was opposed also to the continuous administration of small doses of mercury, and preferred larger doses used intermittingly.

The discussion was continued by Drs. Piffard, Otis, and R. W. Taylor.

ACADEMY OF MEDICINE.

The following officers were elected at a meeting of the New York Academy of Medicine, held January 6, 1876: Vice-President, Dr. Fordyce Barker; Trustee, Dr. S. T. Hubbard; Committee on Admissions, Dr. T. M. Cheeseman; Committee on Medical Ethics, Drs. O. White and M. Morris; Committee on Medical Education, Dr. C. C. Lee; Committee on Library, Drs. J. H. Hinton, J. R. Leaming, E. D. Hudson, Jr., C. M. Allin, and George Bayles. Drs. J. W. McLane and H. F. Quackenboss were elected resident Fellows.

NEW HAVEN MEDICAL ASSOCIATION.

Dr. Francis Bacon, President; Dr. L. M. Gilbert, Secretary.

At a meeting held October 18, 1875, Dr. Nicoll related the following case: He was called, October 7th, to see Mrs. D., aged thirty-seven years, in the eighth month of her ninth pregnancy; robust, and of healthy general appearance. She stated that "the water was flowing away from her," and she was very much alarmed, as in her previous labors the membranes had not ruptured until the head was about to be delivered. She had no uterine pains, but complained of a severe and blinding pain in the head, and informed me that in her previous labor she had this same kind of pain, and was bled, which bleeding was followed by convulsions, she being unconscious at the time of delivery, which was instrumental. She insisted upon being bled. I made an examination, and with some difficulty reached the os uteri, which was dilated sufficiently to admit one finger. The membranes had ruptured and the head presented. Her pulse was not full, and her general condition did not seem to indicate that bleeding would be necessary. I therefore gave her twenty grains of bromide of potassium, to be repeated in an hour, which in three or four hours relieved the pain in her head. I visited her two or three times during the day, but found no progress in the labor, and left her in the evening with instructions to call me if necessity occurred. The next day passed with no advance, although she had some slight uterine pain.

About 11 a. m. of the following day I was called. I found Mrs. D. in bed, with labor-pains at intervals of fifteen minutes, but apparently doing no good. While I sat considering what course I would pursue, the pain in her head returned with increased severity, and attended with disordered vision and entire cessation of the uterine pains. I immediately administered fifteen grains chloral hydrate and one drachm of fluid-extract of ergot. In ten minutes the head was partially relieved. A half-hour passed, and I gave her ten grains of chloral with one drachm of fluid-extract of ergot.

In fifteen minutes she exclaimed: "I guess that medicine will do the business; the pain in my head is all gone, and I feel the right kind of pain in my bowels." In three-quarters of an hour the child was delivered living, but, having hydrorachitis, it died in six days.

The placenta was not in a healthy condition, being of a greenish-yellow color, and very soft. This patient in her previous labors always had severe after-pains for two or three days. This time she had none. The uterus contracted firmly, and she fell asleep soon after delivery, and slept four hours. She recovered unusually well. Had I yielded to the patient's wishes and bled her, I doubt not she would have had convulsions, as in the former instance.

Dr. DAGGETT believed venesection to be generally indicated in threatened and actual puerperal convulsions. He usually practised it. He remembered one case of severe convulsions in which the bromide of potassium was very freely used. In this case peritonitis occurred in about a week, and the patient died. He afterward regretted that he had not bled.

Dr. LINDSLEY stated the case of a woman who, counting from the last menstruation, had gone past her time for confinement about four weeks. The labor was prolonged. After waiting upon her most of the night, he delivered by forceps and went home. Soon a messenger followed him, saying that his patient had had a spasm. He found her in a semi-conscious condition. She had foamed at the mouth, etc. Twenty grains of bromide of potassium were administered, and repeated in an hour. There were no more convulsions. The patient could not remember the events of that night. She had a moderate malarial attack on the sixth day. In this case the room was warmed by a gas-stove, and contained considerable carbonic acid, and aldehydes thereby generated.

The case of ruptured perinæum with immediate operation, reported at the last meeting by Dr. Alling, suggested to Dr. Dibble a case of complete rupture of the perinæum, including the rectal sphincter, and depriving the patient of control over the bowels. Without any operation she was kept quiet in bed, and recovered so as to experience no inconvenience from the accident. The doctor has seen numerous cases of less complete rupture of the perinæum, followed by recovery, without operation.

Dr. Bacon related the following cases of injury to the cervical vertebræ:

1. A child about four years of age, from out of town, had received a blow on the back of the neck by a croquet-mallet about ten days before. It was stunned and made somewhat dizzy by this. These effects passed away in a few days, when it was pushed off a sofa. Four days after this accident it was brought to him by the parents and a physician of their neighborhood.

The neck was stiff, the head immovable, the chin projected forward and upward; and the nucha in the region of the third or fourth vertebra was concave and projected forward. There was dysphagia. The movements of the body were slow, though there was no paralysis. It was clear that there was partial dislocation, at least, of the third or fourth cervical vertebra. The parents were informed of the danger attending reduction. Chloroform was administered. The head was extended, flexed forward, and slowly rotated, and reduction was accomplished. Splints were applied and afterward a plaster bandage, and the child did unexceptionably well.

This is the third case of reduction of the vertebral column reported to the Association by Dr. Bacon.

2. A man diving from a wharf struck the sand at the bottom of the water with much force and was immediately paralyzed.

He was seen by the doctor one week later. The arms were paralyzed in motion and sensation, except the parts supplied by the distribution of the radial nerve. There was some sensation in the upper part of the chest; below this there was complete paralysis. There was no reflex action in the lower extremities. He complained of pain in the vertex and between the scapulæ. A few days later he became delirious, and in his delirium he rolled his head violently and lifted it from the pillow. There was at no time any improvement. The delirium gradually passed away and he became comatose, and died six weeks from the time of the injury.

On *post-mortem* examination, the arch of the fifth cervical was found broken on either side, and in this there had been some effort at repair. The body of the sixth vertebra was completely crushed, and in the softened condition of carious bone. A piece of the body of this bone was found in the tissues anterior to it. The spinal cord at the seat of the fracture, and above to the third vertebra, was diffluent. The diffluence below the injury was still more marked, being brownish and fluid. It seemed singular that there should have been so much motion in this case.

Bibliographical and Literary Notes.

ART. I.—*Cyclopædia of the Practice of Medicine.* By Dr. H. VON ZIEMSSEN. Vol. V. *Diseases of the Respiratory Organs.* By Profs. JUERGENSEN, HERTZ, RUHLE, and RINDFLEISCH. A. H. BUCK, M. D., editor of American edition. 8vo, pp. xiv.–712. New York: Wm. Wood & Co., 1875.

JUERGENSEN contributes to this volume of the "Cyclopædia," Croupous and Catarrhal Pneumonia, Hypostatic Processes, and Pneumonia from Embolism.

The following statement (on p. 144) succinctly defines the the author's opinion concerning the nature of croupous pneumonia:

"Croupous pneumonia is a constitutional disease, and is not dependent upon a local cause. The pulmonary inflammation is merely the chief symptom, and the morbid phenomena are not due to the local affection. The hypothesis of a morbific cause is indispensable. Croupous pneumonia belongs to the group of infectious diseases."

The principal facts adduced in support of this view are these: there is no constant relationship between the local mischief and the constitutional disturbance; when the fever abates the patient becomes improved so far as other constitutional symptoms are concerned, although no change can be detected in the extent and nature of the local disease; its typical or definite course, which is not observed in affections of a purely local origin; and the impossibility of it being induced artificially, cold acting only as an exciting cause.

Juergensen calls attention to the liability of confounding croupous pneumonia with the "desquamative pneumonia" of Buhl, but confesses too little experience with the latter condition to express an individual opinion as to its existence. As to the causative relation which pneumonia bears to tuberculous disease, he thinks the latter affection only supervenes through defective nutrition—never by a direct result of the inflammation. He observes that there is a liability of mistaking a single for double pneumonia from the fact that signs of solidification are frequently observed on the healthy side when single pneumonia alone exists. In the enumeration of the physical signs, he does not distinguish between the subcrepitant and crepitant *râle.*

The author shows by the most conclusive reasoning, that the patient sustains the greatest danger from failure of the heart to perform its functions. One of the worst enemies to the heart is the high temperature accompanying the disease; consequently, the primary indication is to reduce the temperature, and when the heart shows signs of failure it should be sustained by stimulants. Cold baths and quinine are freely used. It is said that quinine may be employed with safety in doses of fifteen grains for children under one year, and seventy-seven grains for adults, when necessary. Ordinarily, however, he succeeds with smaller quantities. It is to be given at once. We are of the opinion that whatever quantity is employed, it is better borne if administered in divided doses, the entire dose being taken within thirty minutes, and is quite as effectual. All remedies which tend to induce collapse, such as tartar-emetic, veratrum, venesection, and digitalis (except the latter as a heart-tonic), are very justly discarded. Bleeding is said to relieve temporarily the embarrassment when due to obstruction; but it is compared to cutting down the tree in order to obtain the fruit—the conditions requiring it are liable soon to recur, and few patients will survive its frequent repetition. Sufficient alimentation, we are glad to notice, is considered most desirable. No mention seems to be made of the carbonate of ammonia as a special remedy. Many pathological points of interest are discussed, which we have not space to notice. Juergensen is an original thinker, and does not fear to join issue with prominent authorities when occasion requires.

In view of the frequency of the occurrence of catarrhal pneumonia (Buhl classifies it differently), we have thought proper to notice some points in Juergensen's therapeutics of that affection. The principles by which he is governed are stated on page 226:

"Just as in croupous pneumonia I emphatically attributed to cardiac insufficiency the first place in the rank of fatal agencies, without thereby underrating the importance of impeded respiration, so, in catarrhal pneumonia, I believe I am right and safe in reversing this order, and announcing *respiratory insufficiency* as the principal cause of death. Of course it is to be understood we do not thereby ignore disturbances of the cardiac functions."

The remarks upon the prevention of catarrhal troubles are very good and well-timed. When acute bronchitis exists, with a view to the prevention of atelectasis and consequent catarrhal pneumonia, he frequently cuts it short, if seen sufficiently early, by keeping the patient in a cool temperature (54° to 64° Fahr.), and causing him to inhale steam. In catarrhal pneumonia the temperature rarely requires the use of the cold bath, but in order to allay what fever does exist, and thus prevent respiratory and cardiac disturbance, he recommends a bath of moderate temperature, followed by cold affusions. When in spite of this the respiration becomes imperfect, a stream of water is directed against the back of the head. "If a stream of water, not more than a third of an inch in thickness, is directed against the back of the head, over the region of the medulla oblongata, a spot will soon be found, the irrigation of which produces the most violent respiratory efforts." When the secretions accumulate within the bronchi, emesis is recommended by means of the hypodermic use of apomorphine, or full doses of tartar-emetic. For ourselves, we should much prefer the administration of alum to the use of antimony. Infusion of senega is advised for the purpose of exciting cough, when necessary to expel the mucus. Our own habit is usually to administer opiates *cautiously*, and with seeming advantage. The rules for the employment of quinine as an antipyretic, and alcoholic stimulants, are the same as given under croupous pneumonia. If the case becomes chronic, oil of turpentine is advised.

The articles contributed by Hertz include anæmia, hyperæmia, and œdema, hæmorrhages, atelectasis, atrophy and hypertrophy, emphysema, gangrene, new growths, and parasites. These topics are very ably handled, but we must omit their special notice.

We desire to call attention to some of the special views of Ruhle on "Consumption," and of Rindfleisch on "Tuberculosis." These gentlemen are in accord as regards the constitutional nature of phthisis, but are in direct opposition upon the question of the pathological process in the formation of the gray and yellow deposit. The article by Ruhle is written from a clinical standpoint, while that by Rindfleisch is written purely from that of the histologist.

Among the etiological factors enumerated by Ruhle are scrofula, and anything which depresses the vital energies, either hereditary or acquired, including a condition styled "sickliness." This term is not synonymous with weakness, although this condition may coexist, but it is defined as a state of the individual which favors his becoming ill from slight causes. Some space is devoted to the consideration of bronchial catarrh in its relation to phthisis, as well as other inflammations in the same relation. The author seems, after considering all points, to think some constitutional cause must always exist—some scrofulous foci; but holds the question rather *sub judice*, in case of pneumouia of the apex. It is stated on age 499:

"Bronchial catarrh should not be regarded as *in itself* a cause of consumption; it produces this result under *certain conditions* which induce the disease, even when there is no catarrh."

On page 504, on consumption following measles, he states:

"But simple bronchial catarrh and catarrhal pneumonia do not of themselves produce phthisis, and we must therefore infer a special cause for the alleged frequency of this disease after measles. The explanation must lie in the occurrence of scrofula, and in the infiltration and caseation of the lymphatic glands," etc.

He believes, however, that the initial step is inflammation, but of an exceptional character, which is influenced by the state of the system, such as hereditary or acquired scrofula, etc. He says that catarrhal pneumonia may be considered, from an anatomical standpoint, as a frequent forerunner of pulmonary consumption; but, from a clinical standpoint, the connection cannot be maintained. Juergensen says (p. 197), "*Acute miliary tuberculosis* must be mentioned as a not infrequent complication."

Hæmorrhage is not considered among the causes; but it is suggested that when blood is retained and decomposes within a part already diseased, it may hasten the process. Rindfleisch is in accord with Ruhle as to the causative relation of hæmorrhage, but offers a different explanation for the rapid changes which take place afterward. Hertz (pp. 308–10) is of the same opinion. Considerable importance is attached by Ruhle to the form of the chest in the causation of consumption—more than we have hitherto been led to infer.

In the process of development and the relation between the gray and yellow tubercle, the author holds that, as the scrofulous inflammations are characterized by an especially abundant proliferation of cells, "in the lymphatic glands these proliferated cells are pressed together so compactly that they readily die, the inflammatory products become 'caseous,' and form infecting foci for the development of phthisical diseases." He claims that miliary tuberculosis is always the result of absorption of *débris* from caseous foci; it bears no other relation to ordinary consumption than that of a complication; is a special affection; and is attended with a widely different clinical history.

Three varieties are enumerated, viz.: 1. "*Simple chronic pneumonia* of the apex," which consists only of a "chronic indurative inflammation." 2. "*Broncho-pneumonia*," the inflammation in the surrounding parts being excited by "clusters of nodular foci," with which it becomes mingled. These products become caseous, ulcerate, and form cavities. 3. A form consisting of morbid processes beginning in the bronchi, and which produce inflammatory infiltration, swelling, caseation, dilatation, and ulceration.

Ruhle attempts to differentiate these varieties, but, as they frequently occur in combination, he admits that it is not always possible to do so. We confess that, viewing the affection from a clinical standpoint, we are never able to make the distinction. Indeed, we are disposed to question the correctness of this division, and the author's view of the relationship of miliary tuberculosis.

In considering the diagnosis by the physical signs, in the early stage, the impression is by no means as clear as that left upon the mind by the description given by Flint.[1] Signs of solidification elicited by whispering, we believe, are not mentioned. Yet the "analysis of symptoms" is quite exhaustive, and is, upon the whole, a very good description.

So far as therapeusis is concerned, the author is doubtless correct in his idea of the importance of commencing treatment during childhood with a view to the eradication of scrofulous tendencies. Extirpation of enlarged glands is recommended, and we may add that Rindfleisch incidentally advises the same measure. Ruhle is not prepared to express an opinion upon the value of alcohol. Quinine, we are told, should only be given for the purpose of reducing temperature, and this indication must be met. Loomis advises the continuous employment of quinine.

One of the most interesting facts of the book is Rindfleisch's account of tuberculosis. He teaches the essential lesson that scrofula is identical with tuberculosis, and that the tubercular poison is located in the scrofulous glands, thus

[1] "Physical Diagnosis," etc., second edition.

agreeing with Scüppel. He insists on retaining the name "tuberculosis" for the phthisical processes. When scrofulous glands become inflamed, local foci for the generation of tuberlosis are formed. Tuberculosis of the lungs is said to be a scrofulous inflammation, attended with a tubercular (gray) deposit mixed with inflammatory deposits and proliferated cells, which become degenerated and caseous.

We should like to carry our readers through the vast labyrinth of the author's descriptions and reasonings, but we can make but two or three additional statements. We may say, however, that there is much that seems well substantiated and worthy of acceptance. Whether the initial step is inflammatory (as the author[1] supposes) or not, we must claim that it is not positively decided; but one point is settled, according to the teaching of both authors upon this subject: in order to develop a tubercular process a previous cachectic state of the system must exist, and a *cold* can only act as an *exciting* factor. We are inclined to agree with Rindfleisch in supposing the *gray* tubercle to be the primary deposit liable to undergo the process of "caseation." This alone will account for the occurrence of tubercular meningitis in certain cases.

The miliary tubercle is said to originate from the fixed connective-tissue cells of the blood-vessels, and takes place at the junction of the bronchiole and the acini. The special products may be conveyed by the sputa and lodge upon prominent points, thus occasioning tuberculosis of the vocal cords and larynx, and of the alimentary canal by the sputa being swallowed. As regards the desquamative pneumonia of Buhl, Rindfleisch says he has never seen a pure type unaccompanied with tubercle granules, peribronchitis, or cavities; but thinks it may possibly occur as a distinct form of scrofulous inflammation, as scrofulous arthritis, etc.

There is a considerable overlapping of the subjects by the several authors, as is observed in the last two noticed. Atelectasis is also considered at some length by both Juergensen and Hertz. This, however, is no detriment, as the articles seem to be written as exhaustive dissertations rather than as compilations of the views of others. One of the most noticeable features of this volume is the almost entire want of reference to American authorities. But few English authorities appear in the bibliographies, while the German and French are well represented. On the whole, the volume is equal in point of interest, translation, and style, to its predecessors, and we wish to bestow upon it the same praise which we felt due to the first three volumes published.

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[1] He admits that the two conditions always coexist in tuberculosis.

Art. II.—*The Cholera Epidemic of* 1873 *in the United States.* 8vo, pp. 28–viii.–1025. Washington: Government Printing-Office, 1875.

The first section of this work, including the first twenty-eight pages, is entitled "The Introduction of Epidemic Cholera into the United States through the Agency of the Mercantile Marine. Suggestions of Measures of Prevention." By John M. Woodworth, M. D., of the Marine Hospital Service.

The remaining sections form the bulk of the book, and are made up of "Reports prepared under the Direction of the Surgeon-General of the Army." This portion of the volume is embraced under the three following heads: A, "History of the Cholera Epidemic of 1873 in the United States," by Ely McClellan, M. D., U. S. A.; B, "History of the Travels of Asiatic Cholera in Asia and Europe," by John C. Peters, M. D., of New York; in "North America," by Dr. McClellan; and C, "Bibliography of Cholera, by John S. Billings, M. D., U. S. A.

At least one important result may be fairly claimed for Dr. McClellan's labors: no unprejudiced reader can rise from a perusal of the facts he adduces, and the arguments thereon based, without a positive conviction that the disease which prevailed in the Mississippi Valley, and caused such bitter and heated controversy, not only in the medical but the secular press, was really contagious cholera of foreign origin. This, of itself, would entitle him to no small meed of praise; for, with the single exception of yellow fever, it is doubtful if any other disease has been the occasion of such diverse and tenaciously-held views and opinions as the one under consideration. In certain localities of the West and Southwest the majority of the profession strenuously advocated the claims of their respective sections to the bad eminence of being the birthplace *de novo* of malignant or epidemic cholera; while others denied that the disease was aught else than cholera-morbus or nostra. Such claims and denials, so far at least as they relate to the epidemic of 1873, are forever set at rest by the patient, thorough, and intelligent investigation to which this officer devoted nearly eighteen months of close application; for, long before Congress specifically ordered this report (beginning, indeed, with the advent of the disease in Central Kentucky, where he was then stationed), Dr. McClellan had been gathering facts, holding correspondence with other observers, and, in short, consciously or unconsciously, paving the way for this exhaustive work.

In the "Clinical History of the Epidemic," which forms the subject of his first chapter, the disease is succinctly and graphically described, and a number of typical cases are given which fully establish its identity as malignant epidemic cholera. This is followed by a chapter on the "Etiology of the Epidemic," set forth in a series of propositions which are, on the whole, ably and successfully maintained in the argument which follows each. The most important of these propositions are the ones announcing the infectiousness of cholera through the ejecta of those already infected; the "from man-to-man" nature of its diffusion; and the limitation of its *de novo* origin to the delta of the Ganges. As the logical sequence of these propositious, the "Prevention of Cholera" in the United States is next considered in a carefully-written chapter, in which the efficiency of disinfection and of ordinary hygienic observances is strongly demonstrated.

The four hundred and odd pages occupied by the "Narrative of the Epidemic of 1873" is rather monotonous reading, but exhibits a conscientious and candid effort to present a complete historical record of the inception, progress, and termination of every outbreak of the disease in the country during that period. Its chief value consists in the abundance of facts it presents sustaining the proposition of the portability of the disease, and in the plausible, not to say conclusive, evidence as to the mode of its introduction into New Orleans.

With Dr. Peters's labors as a cholera-historiographer the profession is already well acquainted, and in this volume—in addition to a general summary of the origin and spread of the epidemic "which reached the United States in 1873"—he has given a flowing, readable history of the "Travels of Asiatic Cholera in Asia and Europe," which is supplemented by Dr. McClellan, who takes the various epidemics, beginning with 1832, at the point where Dr. Peters leaves them in Europe, and follows them in their details in North America.

The bibliography by Surgeon Billings is unparalleled in extent and accuracy; and the entire volume is an additional evidence, if that were needed, of the ability and attainments of the Medical Corps of the Army.

Congress, we understand, has ordered an edition of ten thousand copies; so that members of the profession who are interested in the subject should find no difficulty in adding this volume to their libraries.

ART. III.—*Lectures on Dermatology.* By ERASMUS WILSON, F. R. S., F. R. C. S. London: J. & A. Churchill, 1875.

SINCE Wilson's appointment to the professorship of Dermatology at the Royal College of Surgeons of England, a Chair founded by himself in 1871, he has been in the habit of giving each year a limited course of lectures upon diseases of the skin. The lectures delivered during the first three years were published in 1873, while those delivered since are included in the present volume. These lectures are somewhat peculiar, insomuch as they are neither strictly didactic nor strictly clinical, but are quasi-clinical demonstrations, not of actual patients, but of pictures, casts, and wax-models contained in the museum of the college. Why this plan of teaching should be adopted in a city where an abundance of live material is always at hand, it is hard to say; but, fortunately, the value of the volume does not depend so much upon his descriptions of the appearances presented by the models, etc., as it does upon his comments upon the diseases which they represent. The ripe experience of a man advanced in years, whose whole life has been devoted to the observation and study of a special class of diseases, cannot fail to prove of value to those who are engaged in the same studies. The general reader, however, will not derive the same benefit from them, in consequence of the lack of systematic arrangement, and the fragmentary manner in which the affections are considered. The present volume includes struma, lupus, lymphadenoma, xanthoma, epithelioma, ichthyosis, scleriasis, verruca, clavus, nævus, spargosis, molluscum, cheloma, prurigo, etc. Lupus he justly regards as a scrofulous affection, a view maintained by many of the best clinical observers, but one to which objection is made by those who advocate a more strictly local pathology in cutaneous affections. Xanthoma he admits to be possibly dependent upon preëxisting hepatic disease, an idea which, a few years ago, he utterly repudiated. At the end of the book he gives an extended account of the case of Anne Louise Lateau, which he regards as a "remarkable case of neuropathic disorder, accompanied with vesication of the skin and hæmorrhage." This is a little amusing, as we supposed that none except a few ultra-religionists believed in the genuineness of the miraculous "stigmata" which this young woman displayed.

While the volume is, on the whole, pervaded with a vein of sound common-sense, it yet contains much that will strike the modern student of dermatology as fantastic, not to say absurd. It is, therefore, a book which will be read by the expert with pleasure and profit, but one that will prove a stumbling-block in the way of those who seek to commence their cutaneous studies by its perusal.

Art. IV.—*Family Records, in Blanks classified in a New System.* New York: Henry Holt & Co., 1875.

"Family Records" is not, strictly speaking, a professional work. It consists of a bound series of blanks, which afford space for entering everything of interest concerning the members of an individual family. Thus, it begins with the names of the family, acting as a substitute for the pages in the old family-Bible; then follows the genealogy, incidents in the life of members, to serve either for inspiration or warning; a record of heirlooms and their histories, details of domestic economy, stories of travel, and "miscellaneous pages," devoted to matters previously unclassified; but what makes "Family Records" of interest to the physician is, the so-called tabular division in which parents are encouraged to write down, not only the date and place of birth of each child, but such facts of personal history as the date of the eruption of the first tooth, of the twentieth tooth, when the child began to walk and talk, its weight at different ages, the diseases through which it passed, the accidents from which it has suffered, and the like; the value of which information can best be comprehended by the physician. We sincerely wish that the past generation had had the forethought which the present work is intended to encourage in this.

ART. V.—*On Poisons in Relation to Medical Jurisprudence and Medicine.* By ALFRED SWAINE TAYLOR, M. D., F. R. S., Lecturer on Medical Jurisprudence in Guy's Hospital, etc. Third American, from the third and thoroughly revised English edition. With 104 Illustrations. Philadelphia: Henry C. Lea, 1875.

THE previous editions of this work, excellent as they were in their time, had fallen behind the requirements of the present day. Hence the thorough revision, which has furnished us with the best book of its kind in the English language. It is not intended to be a complete history of poisons and poisoning, but simply a manual for the use of students and practitioners, both in law and medicine. The author is recognized as a high authority in toxicology and medical jurisprudence, and is so well known to the profession that we need do no more than call attention to the publication of the work before us.

ART. VI.—*Lectures on Syphilis, and on some Forms of Local Disease affecting principally the Organs of Generation.* By HENRY LEE, Professor of Surgery at the Royal College of Surgeons of England, etc. Philadelphia: Henry C. Lea, 1875.

THIS is a collection of lectures which have already appeared, either in full or in abstract, in different medical journals. They cover ground that has not, in the author's opinion, been sufficiently dwelt upon in the standard works: as, the inoculability of syphilitic blood; the inoculation of the secretions of primary and secondary syphilis, and the modification of these diseases; the pathology and treatment of discharges from the prostate gland, etc. The author seeks to revive and illustrate some of the half-forgotten doctrines of Hunter, and turn them to account in the light of modern investigations.

BOOKS AND PAMPHLETS RECEIVED.—Annual Reports on Diseases of the Chest, under the Direction of Horace Dobell, M. D., Consulting Physician to the Royal Hospital for Diseases of the Chest, etc., etc.

A Contribution to the Study of Post-Nasal Catarrh. By Beverley Robinson, M. D. Read before the New York County Medical Society, September 27, 1875.

Transactions of the American Neurological Association, for 1875. Edited by F. P. Kinnicutt, M. D. and T. A. McBride, M. D. Vol. i., 1875.

The Sanitary Condition of Boston. The Report of a Medical Commission, consisting of Charles E. Buckingham, M. D., Calvin Ellis, M. D., Richard M. Hodges, M. D., Samuel A. Green, M. D., and Thomas B. Curtis, M. D., appointed, by the Board of Health of the City of Boston, to investigate the Sanitary Condition of the City. 1875.

The Genesis of an Epidemic of Puerperal Fever. By William T. Lusk, M. D., Professor in Bellevue Hospital Medical College. Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children*, vol. viii., No. 3, November, 1875.

In Memory of Ernst Krackowizer. New York: G. P. Putnam's Sons, 1875.

On the Sequelæ and Prophylaxis of Simple Tonsillar Hypertrophy in Children. By Beverley Robinson, M. D., Surgeon to the Manhattan Eye and Ear Hospital (Department of the Throat). Reprinted from *American Journal of Obstetrics and Diseases of Women and Children*, vol. viii., No. 3, November, 1875.

Ninety-third Annual Catalogue of the Medical School (Boston) of Harvard University, 1875–'76.

The Address in Obstetrics and Diseases of Women and Children. By William H. Byford, A. M., M. D. From "Transactions of the American Medical Association." Philadelphia, 1875.

Case of Chronic Laryngitis. By Beverley Robinson, M. D. From the *American Journal of Medical Sciences* for October, 1875.

Recherches sur une Épidémie de Variole à Lyon, étudiée au Point de Vue de la Contagion, par Joanny Rendu, Interne des Hôpitaux de Lyon, Lauriat de l'École de Médecine. Lyons, 1875. Pp. 32.

Third Annual Report of the Board of Trustees of the Northern Hospital for the Insane, Oshkosh, Wisconsin. For the Year ending September 30, 1875.

Hermaphrodism. From a Medico-Legal Point of View. W. B. Keene, Cooke & Co. Chicago, Ill., 1875.

Neuralgia and other Neuroses arising from Cicatrices of the Scalp, and their Surgical Treatment. By Frederick D. Lente, M. D. Reprinted from "Transactions of the American Neurological Society," 1875.

On some of the Uses of Galvanic and Faradic Baths. By George M. Schweig, M. D. From the *Medical Record* of December 15, 1874.

A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M. D., Physician to the New York Infants' Hospital, the Catholic Foundling Asylum, the Protestant Infant Asylum, Clinical Lecturer on Diseases of Children in Bellevue Hospital Medical College, etc., etc. Third edition, enlarged and thoroughly revised. With Illustrations. Philadelphia: Henry C. Lea, 1876.

A Physician's Notes on Ophthalmology. Second Series. By J. Hughlings Jackson, M. D., F. R. C. P., Physician to the London Hospital and the Hospital for the Epileptic and Paralyzed. Reprinted from the "Periscope of the Royal London Ophthalmic Hospital Reports," vol. viii., No. 2, 1875.

Chemical and Physiological Researches on the Nervous System, No. I. —On the Localization of Movements in the Brain. By J. Hughlings Jackson, M. D., F. R. C. P., Physician to the London Hospital and the Hospital for the Epileptic and Paralyzed. Reprinted from the *Lancet*, 1873. London: J. & A. Churchill.

Dr. H. Lenox Hodge's Note-Book for Cases of Ovarian Tumors, and other Abdominal Enlargements. Philadelphia: Lindsay & Blakiston, 1875.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. SAMUEL B. WARD, GEORGE R. CUTTER, EDWARD FRANKEL, AND W. T. BULL.

SURGERY.

Spasm of the Sphincter-Ani Muscle.—Attention is called, in the *Canada Lancet*, to this affection, by Mr. H. B. Evans, who does not find it described in books treating of diseases of the rectum. There is great difficulty always attending defecation, which is immediately followed by intense agony in the lower part of the rectum. This pain generally continues for a quarter to half an hour, and then subsides entirely until the next movement of the bowels. When the stools are examined, they will be found very small in their diameter, flattened on their surface, and somewhat resembling a ribbon. Sometimes the sphincter seems more disposed to relax itself, and the stools present a more natural appearance; on no occasion have they been of a perfectly cylindrical form. An examination of the rectum by the finger or bougie causes the most excruciating pain, with violent contraction of the sphincter, so that the finger is removed with difficulty. This contraction extends to the upper limit of the internal sphincter, above which the cavity of the bowel is of the natural size. The mucous membrane of the rectum in the contracted part is perfectly healthy, soft, and not thicker than usual, and moves very readily on the surface of the contracted muscle.

It is important to distinguish this disease from stricture of the rectum, with which it has some symptoms in common. The situation of the latter, it will be remembered, is generally two or three inches above the external sphincter, and there is a sound natural portion of the bowel between the stricture and this muscle. At the seat of the stricture the coats of the rectum are felt to be more or less thickened and ulcerated, and generally secrete a thin, ichorous, offensive discharge. In introducing the finger, the agony does not commence until the actual stricture is reached. Besides these symptoms, we have the effect which they always produce on the patient's general condition; and very often a cancerous, scrofulous, or venereal taint can be traced.

The remedy suggested by Dr. McLean, Professor of Surgery at Ann Arbor, was subcutaneous division of the fibres of the sphincter muscle, which was tried with success. A tenotomy-knife was inserted on each side of the anus, parallel with the rectum, and moved backward and forward so as to divide all the fibres within the sweep of the half-circle. Very little blood was lost. The operation was by no means painful; the patient declared herself quite relieved, and has been well ever since.—*London Medical Record*, November 15, 1875. S. B. W.

Vascular Lesions in Fractures of the Leg.—Nepveu (*Bulletins et Mémoires de la Société de Chirurgie*, tome i., p. 365. 1875) has collected fifty-nine cases of fracture of the leg, of which fifty-three were complicated by arterial, and six by venous lesions. The latter cases are not sufficiently numerous to warrant any conclusions, but are interesting from the fact that in all death occurred, when union was nearly completed, from pulmonary thrombosis, secondary to thrombosis of the veins of the fractured extremity. Of fifty cases of injury to the arteries, twenty were primary and thirty secondary accidents. The former include hæmorrhage in fourteen cases; diffused aneurism in three; infiltration and effusion of blood in three; the latter, traumatic aneurism in eleven; hæmorrhage in fifteen, and gangrene in three cases.

Effusion of blood at the time of fracture is dangerous if the quantity be large, or it be exposed to the air. In two cases (simple fractures) suppuration occurred, incisions were made and followed by hæmorrhage, for which amputation was done. As a rule, effused blood should be left to spontaneous absorption. Pressure by apparatus should be avoided, and no incisions should be made till suppuration has occurred.

The source of bleeding both in primary and secondary cases has been most frequently the anterior tibia, the posterior being injured about half as often. Once the nutrient arteries of the tibia gave rise to hæmorrhage, which was arrested by trephining the bone and plugging the wound. In primary hæmorrhage the author recommends—1. Tying the two ends of the vessel in the wound; 2. Plugging the wound with compression of the femoral; 3. Ligature of the femoral; 4. Amputation. Ligature of both ends in the wound has been successful in two cases; in one was followed by superficial gangrene of the dorsum of the foot. On the strength of Bryant's statistics (*British Medical Journal*, 1861, p. 238) the author advises disarticulation at the knee-joint or amputation of the thigh. These give 59.37 per cent. of deaths in cases of amputation of leg, and 55 per cent. for operation at and above the knee-joint. Secondary operations give the same result in both situations, 66.66 per cent.

Secondary hæmorrhage has occurred at intervals varying from five to twenty days, and in one case as late as the seventy-fifth day. If the wound be small, the bleeding trifling, and no loose fragments present, one may trust to sealing with collodion. In a large wound, with more bleeding, it is best to remove splinters of bone, exsect the ragged ends of the fragments, ligate both ends of the injured vessel, and employ such antiseptic resources as injection, drainage, and the cotton dressing of M. Guérin. Hæmorrhage occurring after these measures demands ligation of the femoral, which is, however, not without danger, since, of four cases, two have died, one from profuse suppuration and recurrent hæmorrhage, the other from repeated bleedings and gradual exhaustion. If general symptoms predominate, amputation may be necessary. Of nine cases, the result of only four is stated; two died. False diffused aneurisms are the most frequent, and in six of nine cases have originated from the anterior tibial. Those of secondary formation have appeared in general between the twentieth and forty-second day, and in some cases have been attributed to dilatation of the cicatrix of the artery from removal of tension and pressure occasioned by bandages and apparatus, which have been taken off too soon. The diagnosis presents no unusual features. Spontaneous cure is not rare. Compression of the femoral, either manual or mechanical, is the treatment to be preferred. In from five to six weeks a patient of Verneuil's was completely cured. Ligature of the femoral has succeeded in three cases, but gangrene was imminent in one case, and union delayed till the fourth month in another. Ligature above and below the sac has given a good result in one case, and also opening the sac and plugging the wound. Amputation is only exceptionally indicated.

The three cases of gangrene occurred in comminuted fractures, and in all compression of the vessel by fragments (twice the posterior and once the anterior tibial) was noticed; one case was irreducible. Reduction should be most carefully made, and one need not despair if the circulation is not at once restored. It is well to wait a little, to consider the age, condition of the patient, and the possibility of the existence of atheroma, etc., before resorting to amputation, which should be done above the seat of fracture. Of the three cases, all were amputated, with one recovery.

W. T. B.

DISEASES OF WOMEN.

Brandt's Treatment of Uterine Diseases.—More than ten years ago, Major Thure Brandt, of Stockholm, Sweden, began to apply massage to the treatment of uterine diseases. His method has gradually attracted the attention of the Scandinavian physicians, and was made the special subject of discussion in the meetings of the Christiania Medical Society during November and December, 1874, and January, 1875 (*Norsk Mag. for Laegevidenskaben*, Nos. 1–4, 1875). Brandt claims that his method of treatment is useful in prolapsus and protrusion of the uterus; prolapse of the vagina; hypertrophy and induration of the uterus; ulcerations; abnormal hæmorrhage, depending on relaxation of the uterus; tendency to miscarriage; slight hypertrophy of the ovaries. The method is simple, consisting of three motions:

1. Stroking the loins and sacral regions. In this, the patient assumes a position leaning forward, resting her hands against a wall or door.
2. Pressure with the points of the fingers of both hands on both sides, over the loins and sacral region, as well as over the upper and anterior surfaces of the ischium. The pressure is combined with vibratory shaking. The patient assumes a dorsal, semi-reclining position, and the knees are bent to relax the abdominal muscles.
3. Elevation of the uterus during the vibratory shaking. The position of the patient resembles the previous one. The operator endeavors to press the finger-points of both hands just over the horizontal ramus of the arch of the pubis of both sides down into the pelvis minor, and then to lift up the uterus. This attempt at elevation is also made during vibration.

Brandt states that the force and repetition of these movements are so dependent on individual conditions that it is impossible to give general directions for them. He advises great circumspection in their application. He also directs a fourth movement, which consists of a slight pressure for several seconds with the flat of the hands over the lower portion of the abdominal region. This gives the patient a quieting and pleasant sensation.

Dr. T. J. Hartelius called the attention of the Swedish Medical Society to the subject in February, 1875, and gave the results of his experience with the method ("Transactions" in *Hygiea*, Nos. 3, 4, 1875). He first mentions seven cases of protrusion of the uterus, with a successful result in five cases. One patient did not remain under observation more than six weeks, another one two months, but in the other cases for one or more years after the termination of the treatment. In two cases there was no improvement. He also mentioned five cases of prolapsus uteri with or without prolapse of the anterior vaginal walls. In only one of these cases was the result successful. After these, five cases were noticed in which the method was applied to women who had retroversion of the uterus with chronic metritis. One of these recovered, the others were more or less improved; but it was not mentioned how far the malpositions were removed. Finally, seven cases of chronic metritis, with or without important changes of position. One of these cases recovered, two were improved, and four were not improved.

During the discussion which followed this communication, the opinion was generally expressed that sufficient data for appreciating the actual value of the method had not yet been obtained. It is also to be regretted that it is generally employed by persons who, by reason of their deficient medical education, cannot be regarded as capable of forming a thorough gynæcological diagnosis. G. R. C.

THEORY AND PRACTICE.

Chlorate of Potassa in Vaso-Paralytic Diarrhœa.—With this term Dr. Bonfigli designates the diarrhœa which attends the latter stages of diseases of the nervous system. This diarrhœa is characterized by frequent alvine and serous evacuations, without abdominal tenderness or other digestive disorder, and the autopsy does not reveal the slightest trace of anatomical alteration. The author reports forty-five observations, from which it results that chlorate of potassa is one of the most useful remedies in this kind of diarrhœa. He insists, however, that the remedy should be continued a certain length of time, and that it is necessary to give it in doses of 30–150 grs. in twenty-four hours. In cases of cachexia combined with much nervous depression, the remedy acts slowly, and is ineffectual when there is any active disturbance of the intestinal mucous membrane.—*Lyon Méd.* from *Gaz. Med. Prov. Ven.* E. F.

On Cardiac Hœmoptysis, by Dr. G. Sée.—These hæmoptyses, which are sometimes the only guide to the discovery of a cardiac affection, may be determined by a stasis of the blood in the pulmonary circulation, followed by an increase of the venous tension and a rupture of the capillaries. M. Duguet, on the contrary, holds that cardiac hæmoptysis is attributable to the occurrence of emboli in the right ventricle, and especially the right auricle. An important element is the alteration of the vascular walls; so also an increase of the tension in the pulmonary artery; and the author refers to Dr. Barthelmey's remark that cardiac hæmoptysis is frequent, especially in mitral stenosis complicated with hypertrophy of the right ventricle. Hæmoptysis most often occurs in connection with mitral, very seldom with aortic lesions. The characters of cardiac hemoptysis are—in the majority of cases there is a palpable cause, a violent effort, or more or less prolonged muscular exercise, alcoholic excesses, sudden variations of temperature, pregnancy. In general, the hæmorrhage is slight, and the blood is usually of a dark-red, sometimes black color. The expectoration may become pneumonic, especially if inflammation has taken place around the infarction; sometimes it has a garlic-odor; it is often thick, viscid, and adheres to the vessel. When there is hæmorrhage, though examination of the heart and lungs reveals nothing abnormal in these organs, the case may be one of hysterical hæmatemesis.—*Lyon Médicale; France Méd.* E. F.

REPORT ON LARYNGOLOGY.

No. IV.

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2. Tauber describes the laryngoscopic appearances in ulcerative chronic laryngitis as follows: "We observe an inflammatory swelling, the mucous and sub-mucous tissue is loosened and of velvety appearance, and there is infiltration of the glands: on the former, in the beginning, we see small, flat, eroded little ulcers, or deep single ones. The former lie superficial, sometimes confluent, and only upon an accurate observation can we recognize the marked border surrounded more or less by an inflammatory circle, or they appear to be lined with very small papillary excrescences. Is the ulceration follicular we observe a deep, funnel-shaped ulcer which is generally single; not very often, we notice flat, irregular ulcerations. Sometimes there sprouts from the bottom of the swollen posterior wall of the larynx a pointed papillary growth. The ulcerations are especially met with on the posterior portion of the vocal cords, on the vocal cords, on the posterior wall of the larynx, on the false vocal cords, on the anterior surface of the arytenoid cartilage, and on the petiolus. The subjective symptoms are, troublesome and painful cough, intense dysphagia, with regurgitation of liquids, husky voice, irritative fever, and finally the supervention of gastric and intestinal disorders."

He states that in treatment the condition of the system and the local manifestations of the affection demand equal consideration. The latter he treats with nitrate of silver in substance or solution.

5. Drysdale divides *tertiary sore-throat* into two forms: 1. The ulcerative; 2. The gummy. The ulcerative form of tertiary sore-throat is seen chiefly on the tonsils, or posterior wall of the pharynx, and is comparatively rare. It may occasion discomfort in swallowing and pain in the ear. It may be extensive enough to remove the whole of one tonsil. The gummy tumor of the hard and soft palate is the commonest perhaps of all the symptoms of tertiary syphilis. Gummy tumors of the velum commence by the deposition of small masses of gummy material in the substance of the soft palate, which at an early stage make the soft palate feel to the touch as if it contained small bodies such as cherry-stones, etc., in its substance. In a short time the inflammatory stage supervenes, and the mucous membrane over the infiltrated part becomes dusky-red, glistening, or varnished in appearance. To the touch the parts feel greatly thickened and are sometimes twice or thrice as thick as in the normal condition. The velum becomes immovable at the infiltrated part. The disease is often insidious in its approaches. Patients not infrequently come to the practitioner with a perforation of the palate, who have never known the danger they were incurring by their neglect of the very slight symptoms in the throat. When inflammation has once set in, the disease progresses with great rapidity. The infiltrated part becomes softened and a slough rapidly comes away, so that perforation or complete division of the soft palate into two lateral flaps may occur in two or three days. It is, therefore, on this account, of the greatest

importance that practitioners should be habituated to diagnose at once the characters of the tertiary sore-throat, since any delay in remedies exposes the patient to grave infirmities. The first of these is loss of voice, which is in proportion to the extent of the perforation of the velum, and the second is the regurgitation of food and especially drinks by the nostrils, when the perforation of the velum is not very small. The loss of voice is sometimes almost total. The regurgitation of liquids is often a serious matter, producing emaciation and death from asthenia. Perforations of the hard palate from gummy deposit are also common and produce the same effects, and are amenable to the same remedy. In the treatment, caustics should not be used in the inflammations connected with gummy sore-throat. Nor should such tumors be touched with the knife. What is indicated is the administration of iodide of potassium at once, in large doses of fifteen grains, four times daily. Mercury in such cases is powerless or nearly so, and is only to be tried when the iodide fails—which it does in rare cases.

13. The principle involved in the procedure of Dr. Wales consists essentially in overcoming the contraction of the palatal muscles by elastic force, and for the purpose of accomplishing this he employs an India-rubber cord. His method of placing it in the proper position—a cord such as will readily pass through the inferior meatus into the pharynx without instrumental assistance having been selected—is as follows: One end is introduced into each nostril until they both reach the lower portions of the pharynx. At this moment, the patient is directed to cough, if the presence of the thread has not already caused this movement, and the force of expiration will pretty surely project them into the mouth, when they may be seized by the fingers, and drawn externally until the middle portion of the cord, which is external, is arrested against the nasal septum. Gentle traction is now continued until the soft palate is well drawn forward, when the threads are passed up over the ears, or downward beneath the chin, and then tied, or they may be held by the patient, at any moment after the ends of the elastic are secured at the point indicated, the tension of the cord and correlative palatal pressure may be increased by seizing the threads as they pass out of the mouth, and gently drawing them forward until the palatal contraction is entirely overcome, and the area of the pharyngo-buccal space ample enough to receive the largest mirror.

Should any impediment exist in the nostrils, so that the cord cannot be passed by itself, he uses the following instrument as a cord-carrier: A thin lamina of soft metal, six inches long, and less than one-eighth of an inch wide, is mounted at each extremity with a small ring of an amplitude a little greater than the elastic cord, which is passed through them, and then tipped with small, smooth, oblong fragments of lead. When the instrument is to be used, the cord is drawn through the rings, until one of its tips comes against the corresponding ring; slight tension of the elastic will retain the two in contact, while the point thus formed is being conducted along the inferior meatus. When the metallic point reaches the posterior wall of the pharynx, the elastic projecting externally is pulled through the exterior ring, and made quite slack so that the instrument may be withdrawn from the nares, leaving the cord in position; a similar proceeding is then practised upon the other nostril.

The metallic points of the cords, now in the pharynx, may be easily thrown forward by coughing or hawking, and seized with the fingers and drawn externally. The metallic lamina, on account of its flexibility, will thus be bent as a bow over the bridge of the nose, and out of the way.

17. The model illustrates the present theory by exhibiting mechanically the two operations of the larynx under which all its movements may be included, viz., the tensing and relaxing the cords, and the opening and

closing the glottis. The new view given by the author principally concerned the last-named operation. He holds, in the first place, from the construction of the crico-arytenoid joints, that neither forward nor rotatory movements of the arytenoid cartilages are possible, and that these cartilages can only move laterally, but that by this very movement the interval between the vocal cords is horizontally increased, and the glottis opened. He describes the laryngeal muscles, and how they affect the two operations aforenamed, giving them new names in accordance with their actions—the *arytenoideus*, for example, is called the *occludens*, and the posterior and lateral *crico-arytenoid* together, the *pate-faciens*. Finally, a remarkable corroboration of the truth of this view is derived from the peculiarity in the distribution of the laryngeal nerves.

18. Heitler gives the following as the results of repeated laryngoscopic examinations, in patients suffering from morbus Brightii :

In all cases, the mucous membrane of the mouth is pale, and washed out in appearance ; the uvula and the arcus palato-glossi and palato-pharyngei alone being slightly reddened, the former sometimes slightly swollen. The mucous membrane of the larynx, when free from catarrhal inflammation, presents the same pale color.

In the majority of cases, an œdema of the laryngeal membrane is present ; indeed, is often the only evidence of œdema which occurs anywhere in the body during the whole progress of the disease. This local œdema may be either general or partial ; the former is always irregular.

Most commonly the ary-epiglottic folds are swollen, either one alone, or both simultaneously ; if the latter be the case, the œdema, is rarely regular, but usually irregular ; this œdema is often so serious that the sinus pyriformes are entirely filled, and the tumors cause a marked narrowing of the auditus laryngis. Together with this œdema of the ary-epiglottic folds, an œdema of the posterior laryngeal wall usually exists, which may be only slight, but on the other hand is sometimes so excessive that the œdematous and tumefied mucous membrane projects far out into the cavity of the larynx, and hides from view more or less of the vocal cords. Swelling of the false vocal cords is rarer than the above, and may affect both or one alone ; in either case covering to a greater or less degree the true cord which lies beneath it.

If the œdema involve the larynx generally, it will usually be irregular as regards its degree, in the various parts of the larynx, and very unsymmetrical ; for instance, with a marked swelling of one ary-epiglottic fold, the false vocal cord upon the opposite side of the larynx may alone be seriously affected, and *vice versa*. The position of the patient has no influence upon the location of the œdema.

The relation between the occurrence of an œdema in the larynx and in other parts of the body is very variable. As has been already stated, laryngeal œdema may occur without the slightest sign of an œdema of other organs or parts, and the reverse also holds true, that large serous accumulations may take place in the various cavities of the body without the laryngeal mucous membrane becoming infiltrated ; œdema of the latter often continues after that of other parts has disappeared, often disappears with it, and may come and go regularly with the periodical subsidence or recurrence of the general anasarca.

22. The form of angina described, which Lasèque considers as a new variety, but which the history of the case given apparently demonstrates to have been syphilitic in its nature, occurred in the person of a midwife who had, while an abrasion existed upon the finger, delivered a woman suffering from syphilis. Some days later, the sore developed indurated edges, and the glands in the axilla swelled ; she never had any rash, nor any other venereal symptom. Twenty years later she developed a rhinitis and sore-

throat, which she supposed to be due to exposure, but which persisting, she sought admission to the hospital. On inspecting the throat, the tonsils and back of the pharynx were seen to be covered thickly with small ulcers, varying in size from a lentil to a large pea, with grayish floor, and between them the mucous membrane was red and glistening. The mucous membrane between the ulcers was indurated, and the edges of the sores were raised, and the ulcers themselves looked as if punched out. The rapid healing of the finger, twenty years before, and the swollen lymphatics, with the absence of specific symptoms, led the author to believe that the sore on the finger was a soft chancre only, and that the present affection was not venereal, but that the angina in question was a new form of pustular sore-throat which had ended in ulceration.

28. Two cases in which this condition existed are narrated by Sommerbrodt. In the first, a man of sixty-eight years of age, difficult deglutition had been a prominent symptom for more than a year, increasing until he was finally unable to swallow any thing but fluids. A laryngoscopic examination revealed a hard, smooth prominence, occupying the whole breadth of the pharynx, from the level of the tongue downward, until it cut off from view in the mirror the posterior laryngeal parts. The patient exhibited a marked prominence of the breast, which was compensated for by an arching forward of the bodies of the upper cervical vertebræ. The author states that the latter condition is a rare cause of difficult deglutition. In the second case—a young girl—the difficulty in deglutition had only manifested itself within some seven weeks, but was so marked that only fluids, and they only with difficulty, could be swallowed. Pharyngitis granulosa was diagnosticated, and the difficult deglutition considered as depending upon a reflex spasm of the inferior pharyngeal constrictor, caused by its presence. Treatment of the pharyngitis terminated in a speedy cure of the spasm. Reflex spasm depending upon a granular pharyngitis may cause—1. Through the glosso-pharyngeal nerve and vagus, to the constrictor muscles of the pharynx, a feeling as if a foreign body were in the throat, spasm or constriction of the pharynx, or difficult deglutition. 2. Through the vagus, excite cough (compare Kohts, *Centralblatt*, 1874, p. 797), so that a false diagnosis of lung-affection may be made. The writer states that, in a large majority of cases, he has been able, by the mere pressure of a sound upon a so-called granulation in the pharynx, to excite either single or prolonged efforts at coughing. In the treatment of granular pharyngitis, he recommends the treatment advised by Mandl, stating that he has obtained good results by means of it. This consists in penciling the pharynx with a solution of iodine, carbolic acid, and iodide of potash, in glycerine, together with scarification. He regards the addition of the carbolic acid to the above as important, as a means of allaying sensibility.

34. Barnes calls attention to the following interesting case: A female, aged seventy-three, complained of slight difficulty in swallowing. On looking into the throat, it was found natural, with the exception of a small pulsating tumor, situated at the back of the pharynx, between the median line and the right posterior pillar of the fauces, but nearer the latter. It was about an inch in length, and half an inch in width, the upper end being opposite the lower edge of the soft palate. The pulsation of this tumor was entirely arrested by very moderate pressure over the external carotid; partly, no doubt, from the difficulty of getting a good *point d'appui*, it could not be arrested completely by such pressure as the patient could bear over the common carotid.

The writer thinks that, from the extreme ease with which pulsation was arrested by pressure over the external carotid, it was likely that the aneurism was one of the ascending pharyngeal branch of that artery, although cases have been recorded by Porter and Syme of aneurism of the internal carotid, pointing, in the above situation. The case presented no pressure-signs, the pupils were equal, there was no alteration of the voice and no dyspnœa; the only complaint made was a slight discomfort in swallowing. There was no evidence of aneurism elsewhere.

Tying of the common carotid, Barnes thinks, would be the only resource, should bleeding occur. Should the aneurism increase in size (which it had not done materially within the last three months), digital pressure should be tried.

40. Buchanan's paper contains an argument for operating in the suffocative stage and type of the above disease founded on his own experience, and is summarized as follows: Total cases of tracheotomy in croup and diphtheria, forty-six—cured, seventeen; died, twenty-nine. Croup, sixteen cases—cured, six; died, ten. Diphtheria, thirty cases—cured, eleven; died, nineteen.

46. Watson notices the opinion of surgical authorities on the subject, and describes five cases on which he had operated, one of them being fatal. He recommends attention to the following particulars: 1. The external incision should extend from the larynx to the sternum if the tumor be large, and spread widely in a lateral direction. 2. The vessels, arteries, and veins, should be secured as they are divided. 3. The fascia should be opened as widely as the skin; and, if the tumor be large, the soft parts may be divided transversely as far as the sterno-mastoid muscles. 4. The delicate investing fascial sheath of the thyroid body should be left undivided until the vessels included in it have been tied. 5. After the mediate ligature of the thyroid vessels in the cellular sheath, the capsule of the thyroid gland should be opened by stretching through it in the median line, and the attachments of the goitre carefully divided by blunt-pointed scissors curved on the flat. There should be no tearing away of the gland. 6. If bleeding occur after the separation of the tumor from any of its vascular attachments, the vessels if they are to be secured should be tied *en masse* along with the cellular sheath.

50. In his recent address, Mr. Spence drew attention to two classes of cases in which tracheotomy is sometimes performed, as affording temporary relief from suffocative paroxysms or impeded respiration: 1. Cases of aneurism or tumors pressing upon the laryngeal nerves, causing spasm of the glottis; and, 2. Aneurismal tumors of the aorta or innominata, impeding respiration by direct pressure on the trachea at the root of the neck. In the former class of cases, he considers that the operation is not only warrantable but advisable, or even imperative, because it gives relief from impending suffocation, and also alleviates conditions which tend to increase the aneurism, or even to hasten its rupture, so that tracheotomy prolongs life, with comfort to the patient. In the second class of cases, he states that he cannot see the principle on which the operation is recommended. In such cases the tumor is lower down than the trachea can be opened, and if a tube is used, long enough to pass beyond the aneurism, there is great risk of rupturing the sac, which generally in such cases presses upon and causes absorption of the tracheal fibro-cartilages, and projects the mucous membrane. Indeed, as pathological specimens show, the tracheal textures become incorporated as it were, with the sac, and the aneurism generally thins, and tends to ulcerate toward the trachea; hence he cannot see how an opening in the trachea on the distal side of the impediment can relieve the breathing, while there is very evident risk of killing the patient by wounding the projecting and attenuated sac in opening the trachea, or rupturing it in trying to pass the trachea-tube beyond it.

54. Porter, in a very practical paper, after considering the anatomy and

histology of the nasal passages, takes up in detail the etiology and symptomatology of both acute and chronic rhinitis. The former, he states, generally disappears by resolution of the affection, and the part returns to its normal condition. Sometimes, however, the mucous membrane over the turbinated bones remains thickened, and the mucous glands are enlarged and continue to excrete. This predisposes to other attacks, each one adding to the mischief, till the disease becomes chronic. He recommends in treatment—in the early stages—mustard foot-baths, and stimulating diaphoretics locally; the inhalation of a little chloroform when pain and irritation are prominent symptoms; resolvents and astringents when there is a sense of oppression and fullness, recommending the following—Iodine grs. v, extract of conium grs. x, chloroform ℥j— as an inhalant.

Chronic catarrh he regards as little more than a local manifestation of a general diathesis or dyscrasia, saying that, in the greater number of cases, there will be found some impairment of the general system, which, if it be not a direct cause, is too closely connected with it to be a mere coincidence. Struma, syphilis, either inherited or acquired—and what the author terms a catarrhal diathesis—are regarded by him as general predisposing causes. As local causes, polypi, glandular hypertrophy at the vault of the pharynx, repeated attacks of acute inflammation, and inhalation of irritating dust and vapors, are mentioned.

In the treatment of this form of chronic affection, four points are mainly considered. The first has reference to the predisposing cause, the constitutional fault, which must be rectified. In the strumous type, iodide of iron, or iodoform and iron with cod-liver oil, are generally indicated. The treatment of the syphilitic type is obvious. If there is ulceration, potass-iodide with ammonia, and some form of tonic, are called for; but, if no ulcers exist, the bichloride of mercury, in small doses, if persevered with, he thinks has no equal. These cases he regards as much more manageable than those of scrofulous origin. In the forms dependent upon the catarrhal diathesis, phosphorus is indicated.

Secondly, the local cause of catarrh must be removed; polypi and glandular hypertrophies must receive appropriate treatment.

The third important item is to keep the part thoroughly cleansed so as to remove all adherent mucus and incrustations. This he accomplishes by means of the nasal douche, under the immediate supervision of the physician, and with certain restrictions, viz.: the solution used should never exceed a drachm of salt to the pint of water, nor the pressure that of a column of water of twelve inches, and, to reach the upper parts of the nasal cavity, he attaches to the douche a tube with an aperture upon its side, through which, after the tube is introduced into the nostril, the stream is directed upward. The same effect is produced by attaching the tube to a nasal syringe, or the apparatus of Rumbold may be used. Potass. permang., or salicylic acid, may be used in spray after the cleansing.

Fourth, local medication, which consists in touching ulcers with iodine in glycerine and water, with a little iodide of potassium, or with a weak solution of silver, the latter being recommended when there is thickening of the membrane; when the ulcerations are sluggish, he states that chloral hydrate (grs. v—xv— ℥j) answers a good purpose; where the thickening is not marked, iodine-vapor does well; and, finally, in many cases the frequent use of a snuff composed of camphor, tannic and salycilic acid, is advantageous.

58. Griffini, in speaking of the changes in cylinder epithelium in tuberculosis, says that, in 1863, Förster, in his treatise on pathological anatomy, when speaking of inflammations of the mucous membrane of the larynx, observed that, in cases of chronic inflammation of long duration, the mucous membrane undergoes at certain points, or even generally, a special

change, which he calls *dermoid metamorphosis*; that is to say, the mucous membrane, naturally destitute of papillæ, assumes a papillar structure, and appears invested with an epithelium having the character of pavement epithelium; and that Wahlberg, in his work on tuberculous ulcers of the larynx, observes that around tuberculous ulcers of the false vocal cords, in place of the normal stratified ciliated epithelium, there is a thin pavement epithelium; and that this change occurs even when the epithelium, not being perforated but only thinned, the tuberculous ulcer is developing itself. He observes also that the mucous membrane at some points assumes a papillar structure, and endeavors to show that these changes of the epithelium are not to be regarded as the result of an inflammatory process. Griffini says that he, having extended his observations to the mucous membrane of the trachea and bronchi, has ascertained, in severe cases of chronic pulmonary tuberculosis in which the larynx and trachea were affected, that not only around the ulcers on the false vocal cords, but at every point of the mucous membrane where tuberculous nodules were present, the ciliated cylinder epithelium was transformed into pavement epithelium. He does not deny that it is possible that simple chronic inflammation may give rise to this change of epithelium, nor that in tuberculosis the whole mucous membrane of the larynx, trachea, and bronchi, or only the parts around the tubercles and ulcers, may be affected with inflammation; but he merely observes that, in the cases studied by him, the transformation in question was always limited to a small area corresponding to the more or less perfect tuberculous nodules, and that, when distinct nodules were wanting, there were always traces of nodules, or nodules which had undergone retrograde metamorphosis and were being absorbed.

He has never been able to observe the true papillar stricture, such as Förster and Wahlberg describe. The results of his experiment son the reproduction of the ciliated cylinder epithelium of the larynx and trachea of dogs, may be reduced to two principal ones: 1. The newly-produced epithelium, instead of preserving the type of the preëxisting epithelium, has the characters of pavement epithelium with very flattened cells, granular protoplasm, and a large nucleus with distinct nucoleous. 2. If in scraping the trachea we use a scraper with a sharp edge, a fibrinous false membrane is produced, having all the physical and chemical characters of the false membrane of croup, but this does not occur when a blunt scraper is used.

Miscellany.

Appointments, Honors, etc.—Dr. Thomas R. Pooley, of this city, has been invited to deliver a course of lectures on Ophthalmology in the Starling Medical College, Ohio.—Dr. John Charles Bucknill, F. R. S., has been obliged, on account of failing health, to resign the office of Lord-Chancellor's Visitor of Chancery Lunatics. Dr. Crichton Browne has been appointed in his place.—George B. Owens, M. D., has been elected Lord-Mayor of Dublin.—After prolonged and renewed deliberation, the Paris Faculty of Medicine has chosen Prof. Vulpian as Dean, and Profs. Sappey and Broca as his assessors.—Dr. Kundrat, late assistant of Prof. Rokitansky, has been appointed Professor of Pathological Anatomy in Grätz, in place of Prof. Heschl, who has taken charge of the Pathological Institute of Vienna.—Dr. Atthill has resigned the vice-presidency of the College of Physicians, Ireland, and Dr. Hayden has been appointed in his place.—Dr. Warburton Begbie, of Edinburgh, has presented £105 to the Royal Medical Benevolent College.—Henry Kennedy, M. D., has been elected President of the Dublin Pathological Society.—Prof. A. R. Simpson has been elected President of the Edinburgh Obstetrical Society for the next two years.—W. B. Carpenter, M. D., F. R. S., has received from the Queen the Companionship of the Civil Division of the Order of the Bath.

The New York Orthopædic Dispensary and Hospital.—At the annual meeting of the Board of Trustees of the New York Orthopædic Dispensary and Hospital, No. 126 East Fifty-ninth Street, held on Monday evening, January 10th, the following Medical Board was elected for the ensuing year: Consulting Surgeons, Drs. F. H. Hamilton, T. M. Markoe, Henry B. Sands, Stephen Smith, and William H. Van Buren; Consulting Physicians, Drs. William H. Draper, A. Jacobi, and John T. Metcalfe; Consulting Orthopædic Surgeon, Dr. C. Fayette Taylor; Consulting Oculist, Dr. C. R. Agnew; Consultant on Nervous Diseases, Dr. E. C. Seguin; Attending Surgeons, Drs. John G. Curtis, George A. Peters, Thomas T. Sabine, and Newton M. Shaffer; Orthopædic Surgeon, Dr. Newton M. Shaffer; Assistant Surgeons, Drs. S. A. Foster, George B. Packard, and A. B. Judson.

A New Psychological Journal.—A quarterly review of psychology and philosophy, of which the title is *Mind*, made its appearance simultaneously in London and in this city January 1st. It is a journal of one hundred and twenty-eight pages, and is under the editorship of George Croom Robertson, M. A. It is to be especially an organ for the publication of original researches and critical records of progress in psychology and philosophy, but will deal broadly with questions inseparable from the discussion of mental phenomena. The names in the list of contributors include nearly all who are distinguished in the fields to be represented by the new journal. It is issued in this country by Messrs. D. Appleton & Co. An advertisement and prospectus will be found elsewhere in this JOURNAL.

The Late Dr. Van Kleek.—At a stated meeting of the New York Academy of Medicine, held January 6, 1876, the following resolutions were unanimously adopted:

Resolved, That the Fellows of the Academy have heard with sincere regret the intelligence of the death of their esteemed associate, John R. Van Kleek, M. D.

Resolved, That we cherish his memory as that of an honored and useful member of the medical profession.

Resolved, That we sympathize with his family in the great bereavement which they have sustained.

Resolved, That copies of these resolutions be sent to the family of the deceased, and to the medical journals of this city.

W. T. WHITE, M. D., *Secretary.*
S. S. PURPLE, M. D., *President.*

Female Medical Students in Russia.—The *Lancet* is informed that during the past year one hundred and seventy-one pupils received instruction in the Female Medical College established in the capital of the Russias. Of these one hundred and two are noble, seventeen are daughters of merchants, and twelve of clergymen; the remaining twenty-four belonging to other classes of society. It would appear that the young ladies are extremely diligent in the pursuit of knowledge, and in especial display a marked predilection for dissecting-room work.

Ether and Chloroform.—Some valuable testimony in regard to ether is furnished incidentally by Dr. Schiff, of Florence, in his statement in defense of the practice of vivisection. He uses ether in preference to chloroform, because a very extensive experience has convinced him that "etherization, carried to the last grade of insensibility, never becomes dangerous to life as long as the movements of respiration are maintained." He has found chloroform to have a much more extensively paralyzing action than ether, and a special influence on the nerves of the heart.

Society of Neurology.—At the annual meeting of the New York Society of Neurology, held December 20th, the following officers were elected for the ensuing year: President, D. B. St. John Roosa, M. D; Vice-President, William H. Draper, M. D.; Corresponding Secretary, Alfred L. Carroll, M. D.; Recording Secretary and Treasurer, A. McLane Hamilton, M. D.; Curator, Edward G. Janeway, M. D.; Councilors, J. C. Dalton, M. D., Austin Flint, Jr., M. D., H. D. Noyes, M. D., John J. Mason, M. D.

A New Medical Weekly.—Louisville threatens to become the headquarters of medical journalism. The *Louisville Medical News* is the title of a weekly journal, of which the first number appeared January 1, 1876. Drs. R. O. Cowling and William H. Galt are the editors. No. 1, vol. i., opens with a severe attack on the Louisville Medical College and the Kentucky School of Medicine. The editors are evidently prepared for an aggressive warfare.

The Canadian Journal of Medical Science.—Under this title a new monthly journal has been established in Toronto. The first issue, which appeared January 1, 1876, consists chiefly of selections from other journals, with some original cases, and reports of hospital practice. The editor claims that the sole object of the new publication is to raise the standard of medical journalism in Canada.

Death from Chloroform.—The *Medical Times and Gazette* of December 18, 1875, reports the death at Smethwick, Staffordshire, of a healthy man, forty-two years of age, from the administration of chloroform. The operation of extirpating the eyeball was to be performed, but, after the second fifty drops of the anæsthetic had been given, the action of the heart ceased, and could not be restored.

Generous Aid to Science.—The municipality of Paris has lately made the following liberal grants to scientific institutions: To the Faculty of Medicine, £4,000; the Faculty of Sciences, £3,000; and £2,000 to the Finishing Scientific School. A vote of £12,000 to the five higher scientific institutions of the department of the Seine was also adopted.

The New York Ophthalmological Society.—At a meeting of this Society, held on the 10th ult., the following officers were elected for the present year: President, Edward Curtis, M. D.; Vice-President, R. H. Derby, M. D.; Secretary, Geo. R. Cutter, M. D.; Committee on Admissions, A. Matherson, M. D., C. S. Bull, M. D., and A. H. Buck, M. D.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from December 14, 1875, *to January* 13, 1876.

White, Charles B., Surgeon.—Relieved of duty in Department of California, and assigned to duty at Columbus Barracks, Ohio, as Post-Surgeon. S. O. 264, A. G. O., December 17, 1875.

Cowdrey, S. G., Assistant Surgeon.—Assigned to duty at Jackson Barracks, La. S. O. 232, Department of the Gulf, December 18, 1875.

Adair, G. W., Assistant Surgeon.—Assigned to duty at Fort McKavett, Tex. S. O. 233, Department of Texas, December 10, 1875.

Bedal, S. S., Assistant Surgeon.—Assigned to duty at Fort Concho, Tex. S. O. 233, C. S., Department of Texas.

Torney, G. H., Assistant Surgeon.—Assigned to duty at Post of Pineville, La. S. O. 232, C. S., Department of the Gulf.

Merrill, J. C., Assistant Surgeon.—To report to the commanding general, Department of Texas, for assignment to duty. S. O. 264, C. S., A. G. O.

Barnett, R., Assistant Surgeon.—Assigned to temporary duty at Jackson Barracks, New Orleans, La. S. O. 232, C. S., Department of the Gulf.

Taylor, M. E., Assistant Surgeon.—To accompany the command at Colfax, La.—post temporarily discontinued—to

New Orleans, La. S. O. 3, Department of the Gulf, January 5, 1876.

Smith, R. E., Assistant Surgeon.—Assigned to duty at Fort Beyard, N. M.

Rosson, R. L., Assistant Surgeon.—Assigned to duty at Camp McDowell, Arizona Ty. S. O. 108, Department of Arizona, December 11, 1875.

Obituary.

William Acton, M. R. C. S., died at his home in London, December 7th, aged sixty-two years. Mr. Acton was a devoted disciple of M. Ricord, and gained his reputation by pursuing the same line of study and practice as his illustrious teacher. His work on the reproductive organs has reached a sixth edition, and several of his other publications, on the "Control of Prostitution," "Illegitimacy," etc., had given the author a high position in the esteem of his professional brethren.

Dr. John P. Mettauer.—It becomes our sad duty to record the death of another of Virginia's great men—Dr. J. P. Mettauer. He died of some renal disease at his residence at Worsham (the old Court-House of Prince Edward County), Va., on November 22, 1875, in the eighty-eighth year of his life. He entered upon the practice of his profession when about twenty-one years of age, and continued constantly at his post until within a few days of his death, when seized by the fatal attack of disease—all the while enjoying a large and lucrative practice. During his long life of active labor he won for himself, at home and abroad, an enviable reputation. Indeed, no Southern surgeon was more widely known. Many of his contributions to medical journals have become authoritative papers. — *Virginia Medical Monthly.*

Dr. William Boeck, of Christiania, Norway, died December 10, 1875. Dr. Boeck made a tour of the United States in 1870, and laid before the profession his peculiar views in regard to the prevention of syphilis by inoculation.

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Original Communications.

Art. I.—*On the Causes of Gleet, and on the Calibre of the Male Urethra.*[1] By Henry B. Sands, M. D., Professor of Anatomy in the College of Physicians and Surgeons; Surgeon to the Bellevue and Roosevelt Hospitals.

Surgeons often pride themselves upon the certainty of their art when compared with that of medicine; yet the humiliating confession must be made, that many important surgical problems still remain unsolved. To survey our present knowledge concerning a common but obscure disease, may not prove an unprofitable task, and may stimulate us to renewed efforts in obtaining clearer and broader views respecting its pathology and treatment. I offer no apology, therefore, when I invite you to consider the nature of gleet—an affection which is sure to command the attention of every surgeon, both on account of its frequency, and of the difficulties that are often encountered in effecting its removal.

In recent times the term gleet has been employed in a very comprehensive sense, and has been made to refer to nearly every morbid urethral discharge, except that which is characteristic of acute urethritis. Thus we read of idiopathic gleet, due to the strumous or the gouty diathesis; of prostatic gleet, dependent on masturbation, vesical calculus, or piles; and of gleet caused by the simple contact with the urethra of highly-acid urine. We shall avoid much confusion, I think, by giving to the word the restricted meaning which was ascribed to it by John Hunter, Sir Astley Cooper, and most of the earlier writers, who understood gleet to signify an imperfectly cured or chronic gonorrhœa. In this sense alone I shall employ the term; and, although not prepared to deny the existence of the other varieties of gleet, I will say that I have very rarely met with any of them in practice.

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[1] Read before the New York County Medical Society, January 24, 1876.

Understanding, then, that gleet is only a sequel of gonorrhœa, I remark that there is no very clear line of distinction between gleet and its parent disease. The term gleet has reference partly to the character and partly to the chronicity of the discharge. After a gonorrhœal secretion has lasted for a period varying from one to four weeks, it almost always diminishes in quantity, while at the same time it becomes thinner and less opaque; and a little later, in favorable cases, it disappears altogether, leaving the patient secure against a return of the disease, unless he is again exposed to contagion. Not unfrequently, however, the disease abates in intensity, but does not entirely disappear; and the gleety discharge that remains may continue indefinitely, often for months, sometimes for years. The character and quantity of the discharge, too, vary as greatly as its duration. When most characteristic, it is thin, only slightly viscid, and nearly transparent; at times, however, especially after excess in eating or drinking, it exhibits more distinctly the puriform character of the original gonorrhœal secretion. The quantity voided daily may be just sufficient to stain the linen moderately, or it may be almost imperceptible. Often it is noticed only in the morning after rising, or when it is caused to escape by pressure exerted along the anterior part of the penis and urethra. Usually, the disease is unattended with pain, and does not affect the general health. Some patients, however, suffer greatly from anxiety and depression of spirits, and all of them are liable to an aggravation of the disorder after excess or fatigue.

The brief outline of the symptoms of gleet which I have now given will serve to identify it as the affection with which all of us are so familiar. Omitting, for the present, the consideration of its pathology, I will say a few words respecting its management and cure.

And, at the outset, it cannot be denied that in some cases—and these not always the least severe—recovery appears to take place spontaneously. I have known such recoveries to happen after the disease had existed for many months, and after the usual remedies had been employed in vain. These cases are rare, yet they certainly do occur, and the truth of my statement will, as I think, be confirmed by the experience of every surgeon present. But such instances are doubtless exceptional, and usually treatment, either local or constitutional, is required to eradicate the disease. Sometimes its removal is favored by a spare, at other times by a generous diet, combined with change of air and scene. Sea-bathing, and tonic food and medicines, have cured many a gleet that has resisted the ordinary specific remedies for this disease. But other kinds of constitutional treatment may be indicated ; and the presence of a gouty, or strumous, or rheumatic diathesis, may call for its appropriate treatment, to aid in subduing the local disorder. Among internal remedies, copaiba and cubebs have always and deservedly been held in high esteem. Alkalies also, when largely diluted, are not without value in certain cases. In my own experience, however, local treatment has generally proved most efficient in the removal of gleet. Injections, either mild or strong, superficial or deep, according to circumstances, or the occasional introduction of a full-sized bougie into the bladder, have generally yielded satisfactory results. When these and other similar methods of treatment fail, the disease will often be found to depend on a stricture of the urethra, which, when discovered, should be got rid of by some one of the plans of treatment appropriate to that affection.

I have enumerated these items of treatment, because they will aid us in attempting a solution of the question which it is my chief object to discuss this evening ; namely, the pathology of gleet, concerning which, as it appears to me, many surgeons at the present day hold views that are exclusive and erroneous.

In the first place, then, let us bear in mind that the term gleet denotes merely a symptom, and does not indicate the essential nature of the disease. Like the analogous word leucorrhœa, it has a vague meaning, and serves often to hide a great deal of ignorance. The muco-purulent character of the discharge proves it to be inflammatory; while we can be equally certain that it proceeds either from the urethra itself, or from some of the minute canals which open into this division of the genito-urinary tract. Pus secreted from any part of this extensive surface will probably issue from the external meatus in the form of gleet, but that which is the product of cystitis or pyelitis will escape only during micturition.

Regarding gleet, then, as a symptom of chronic inflammation, affecting some portion of the genito-urinary tract anterior to the bladder, what means have we at our command for determining more precisely the locality of the disease? Here we begin to feel that our resources are limited, and our knowledge imperfect; yet much light may be thrown upon this point from three sources, namely: *post-mortem* examination, the exploration of the urethra during life, and the effect of remedies upon the disease.

The pathological changes which *post-mortem* investigations have revealed as connected with gleet, are thus described by authors. Sir Astley Cooper wrote in 1826: "If you examine the urethra after death, you will find the following appearances: inflammation extending for two or three inches down the urethra, and if the urethra be laid open within twenty-four hours, it will be quite florid as far as the seat of the gleet, but pale in the other part. The discharge does not proceed from the vesiculæ seminales, or Cowper's gland, or the prostate, but from the lacunæ. The discharge commonly called gleet proceeds from the lacunæ of the urethra."[1] Rokitanski has observed "Tumefaction of the mucous membrane, enlargement of the follicles, relaxation of the sinuses, and a white or colorless secretion."[2] Sir Henry Thompson says: "Observation demonstrates that the two spots which suffer most from gonorrhœal inflammation are the fossa navicularis and the bulb; I have had opportunities of observing this two or three times in the dead-house on the bodies of patients who had been suffering from gonorrhœa shortly before death. Unusual vascularity is found in the latter situation, particularly if the affection have been chronic, while the intermediate part appears comparatively very little affected."[1] Foerster remarks that "Blenorrhœa sometimes lasts for a very long time without causing any material alteration in the texture of the mucous membrane."[2] Finally, stricture of the urethra has been frequently noticed at *post-mortem* examinations of persons who, during life, had suffered from obstinate gleet.

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[1] London *Lancet*, vol. iii., p. 271.

[2] "Pathological Anatomy," vol. ii., p. 179.

To sum up, then, the lesions that morbid anatomy has demonstrated to be connected with gleet, we find swelling and increased vascularity of the urethral mucous membrane, enlargement of the lacunæ, and sometimes organic stricture. On the other hand, the disease occasionally leaves no traces that can be discovered after death. Now, these records show plainly enough, to my mind, that the essential cause of gleet is a catarrhal inflammation of the urethral mucous membrane, and of the numerous follicles or lacunæ opening upon its surface. The textural changes—except when stricture is present—are usually slight, and in some cases, even when gleet has existed for a long period, no material pathological alterations can be detected. We notice here an evident analogy between the urethral and other mucous membranes. Nearly all of them, when inflamed, furnish a muco-purulent secretion, which may continue for a long time without leading to any striking textural changes in the parts affected. It is interesting to note the morbid alterations which have been observed in the lacunæ. Doubtless the implication of these slender and remote recesses will, in many cases, explain the obstinacy of the disease; for we cannot apply our remedies directly to the inflamed surface. The rebellious character of that chronic inflammation of the eyelids called tinea ciliaris is, doubtless, due to a similar cause, namely, the extension of the disease to the Meibomian follicles. Finally, it is also interesting to notice that there are two parts of the urethra which are especially prone to chronic inflammation, namely, the fossa navicularis and the bulb. We shall find that these facts in morbid anatomy corroborate the results obtained by clinical observation.

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[1] On "Stricture of the Urethra," p. 80.

[2] "Pathological Anatomy," p. 553.

In the second place, let us inquire how far the pathology of gleet can be deduced from an examination of the diseased parts during life. Sometimes the sensations of the patient afford a clew to the locality of the disorder. A feeling of itching, soreness, or smarting, in a certain part of the urethra, either during or after micturition, *may* coincide with the presence of inflammation at that part. Frequent desire to micturate *may* indicate an extension of the morbid process into the prostatic segment of the urethra. A sensation of straining and difficulty in voiding the urine may point to stricture as a probable cause or complication. In many cases, however, the patient experiences no morbid sensation, and is made aware of the existence of his disease only by the appearance of the gleety discharge.

The length and narrowness of the urethra render the visual examination of its deeper parts difficult and uncertain, and the endoscope has failed to fulfill the predictions that were made respecting its usefulness. Yet the instrument, doubtless, has a certain value, and by means of it we can often detect circumscribed spots of inflammation of the urethra, the affected portions of mucous membrane exhibiting an uneven, granular, and highly vascular surface. These granulations are sometimes abnormally sensitive, and readily bleed when touched. They are often present in the fossa navicularis, where their detection is easy, but they occur with greatest frequency in the bulb. Much stress has been laid upon the presence of these granular patches, both as a cause of gleet, and as a forerunner of stricture; yet it is an error to regard them as invariably present. They are absent in many, if not in most, of the milder cases, and cannot therefore be regarded as the sole cause of gleet. Many years ago Kleeburg[1] announced that, in certain cases of this disease, the glandular follicles studding the mucous membrane adjacent to the external meatus were swollen, red, and filled with muco-purulent secretion; and, having made the diagnosis, he readily effected a cure by probing the diseased ducts with the nitrate of silver. Robert[1] states that he has been able, in a number of instances, to cause an escape of pus from these follicles, by pressure made upon their walls. These observations I have confirmed by experience, and the facts are important, inasmuch as they render it highly probable that the lacunæ farther behind, which differ from these only in situation, are often affected in a similar manner. The deep-seated lacunæ cannot be satisfactorily examined during life, but we have *post-mortem* evidence that they are implicated in gleet.

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[1] "Schmidt's Jahrbücher," 1836, p. 35.

The exploration of the urethra by means of sounds often affords much useful information, and, in obstinate cases, should never be neglected. When the point of the instrument passes over an inflamed patch of mucous membrane the patient will often complain of pain, yet not always, for sometimes the diseased parts are not very tender. In examining the prostatic portion of the urethra, we shall be misled if we fail to bear in mind the natural sensitiveness of this region. The special value of sounds, however, is that of enabling us to detect the presence of organic stricture, which is so often associated with gleet. In certain cases bulbous sounds afford the easiest means of determining the presence and locality of a stricture.

In the third place, the pathology of gleet is, in some degree, elucidated by observing the action of remedies upon the disease. The frequent success which follows the employment of topical astringents points to the catarrhal character of the inflammation, while the successful application of such remedies to certain limited parts of the urethra indicates that these parts are especially involved in the morbid process. Many gleets are cured by the introduction of stimulating ointments or powders into the fossa navicularis, while others, which are not benefited by this mode of treatment, yield readily enough when the remedies are inserted as far back as the bulb. The disappearance of a gleet after the removal of a stricture shows the dependence of the former on the latter; while, in the absence of stricture, the persistence of a gleet for years, in spite of treatment, probably often coincides with a thickened and congested state of the urethral mucous membrane along its entire length. I have seen cases which I have thought to be of this description, in persons of intemperate and otherwise irregular habits, and it seems reasonable to suppose that the urethral mucous membrane should be liable to the same kind of inflammation as that which we so often observe in the lining of the urinary bladder.

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[1] "Maladies Vénériennes," p. 80.

We may now conveniently enumerate the following morbid conditions as causes of gleet:

1. Chronic inflammation of the urethral mucous membrane, either diffused over the greater part of its surface, or limited to particular spots—those most liable to disease being the fossa navicularis and the bulb.

2. Inflammation of the lacunæ which open into the urethra.

3. Stricture of the urethra.

4. Inflammation of Cowper's glands, the prostatic ducts, or the seminal vesicles. These, as well as chronic abscesses connected with the urethra, and warty vegetations studding its surface, are but very rarely causes of gleet.

I now propose to examine certain views respecting the pathology of gleet, which I find to be widely prevalent at the present day, and which have for their most earnest and able advocate my distinguished colleague, Prof. Otis. They assume that gleet depends invariably on organic stricture, especially upon what are denominated strictures of wide calibre, and that the division of these by internal urethrotomy affords a method, and indeed the only method, of radical cure. To detect these strictures, certain special means of exploration are said to be necessary, and perhaps I cannot better set forth the views to which I allude than by quoting the following sentences from some of the latest contributions to the literature of this subject:

"Chronic gonorrhœa, gleet (also variously designated as prostatic, gouty, scrofulous), is dependent, as a rule, on abnormal contractions of the urethral canal. The only exception that I recognize (aside from the presence of polypoid or warty growths in the urethra) is the engorgement of urethral sinuses, as the lacuna magna, or some one of those occasionally met with near the meatus, possibly deeper down, and these I have never found engorged unless more or less coarctation at an anterior point was also present. Gleet is always dependent upon stricture."[1] Again: "A constant relation appears to exist between the urethral calibre and the size of the penis with which it is associated. This is a fact demonstrated by careful measurements made with the urethrameter in several hundred cases, without exception being met. The proportion runs as follows: when the flaccid penis measures 3 inches in circumference, the size of the urethra will be 30 millimetres in circumference, or more. When it is 3¼ inches, it will be 32 or more; 3½ inches, 34; 3¾ inches, 36; 4 inches, 38; 4¼ to 4½ inches, 40 or more millimetres."[2] The urethra-meter is an ingenious instrument, the extremity of which is capable of being expanded into a sort of fenestrated sphere by the action of a screw at the handle, the circumference of the part expanded being indicated by a steel hand traversing a dial-plate. To ascertain the normal calibre of a given urethra we are instructed to introduce the urethra-meter closed, "down to the bulbo-membranous junction. At this point the bulbous part of the instrument is to be expanded, by means of the screw at the handle, until a feeling of fullness is experienced, when, if there is no stricture at the point of trial, the hand on the dial-plate will indicate, with sufficient certainty, the normal calibre of the urethra under examination. Now, drawing the instrument slowly out, if stricture is present, the bulb will be arrested at that exact point. The screw is then turned, diminishing the size of the bulb, until it slips through the coarctation, when a glance at the dial will show the calibre of the stricture. This, subtracted from the figures indicating the normal calibre, will give the precise value of the contraction. The remainder of the canal, examined in the same way, brings the bulb finally to the meatus, when, in the same manner, the greater or less deviation from the normal size will be shown."[1] "Vertical sections of the penis, from the junction of the glans with the body of the penis, show a uniform calibre throughout the fossa navicularis, to its external boundary at the meatus, the opening of which is of corresponding calibre. This may be accepted as the normal condition of these parts, and any variations from such uniformity may be considered aberrations from the normal condition."[2] The strictures which are supposed to cause gleet need not be close; indeed, they are commonly such as would escape detection by the ordinary methods of examination. "If a urethra presents, the normal calibre of which is equal to a circumference of thirty millimetres of the French scale, and only twenty-nine of bulbous sound will pass without detecting obstruction, then the urethra is not 'about right.' It is strictured to the extent of one millimetre in circumference, and can never be a healthy urethra while that stricture remains."[3]

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[1] "Gleet, and its Relations to Urethral Stricture," by F. N. Otis, M. D., 1875.

[2] F. N. Otis, *op. cit.*, p. 254.

Now let us inquire whether these statements can be verified. If so, we shall find established an important principle in the treatment of gleet.

I willingly admit that, if the healthy urethra has a uniform calibre, which can be ascertained and measured with precision, it will be possible to detect the slightest abnormal deviations from its size. We must, however, obtain a clear idea of what is meant by the *calibre* of the urethra, as the use of the phrase has a conventional rather than a literal signification. The word calibre is ordinarily employed to indicate the size of a tube, such, for example, as the bore of a gun. If the urethra were such a tube, and if its walls were firm and inelastic, there would be no trouble in determining its calibre. But anatomists have long recognized the fact that the urethra is *not* a tube, except when it is distended. Not only the mucous membrane which forms its immediate boundary, but the erectile and other tissues which surround it, are sufficiently elastic to close the channel completely, unless it is either naturally or artificially distended. This fact is readily demonstrated by transverse sections of the penis, both of the dead and of the living body. On examining the surface of such a section, we notice that the situation of the urethra is denoted merely by a linear depression, caused by the complete contact of the opposed urethral walls. This contact extends throughout the entire length of the urethra. By the expression calibre of the urethra, therefore, we are to understand the size of the canal when distended. Indeed, the phrase can have no other meaning. Now, as the urethral walls are elastic, it must be evident that the calibre of the urethra will vary within certain limits, depending upon the elasticity of these walls, and upon the amount of force used to separate them. Properly speaking, the normal calibre of the urethra would be its size when moderately distended by the urine during micturition; and, although we cannot estimate this with accuracy, we have reason to believe that it is not very large.

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[1] "Gleet, and its Relations to Urethral Stricture," by F. N. Otis, M. D., p. 253.

[2] Dr. F. N. Otis, New York Medical Journal, April, 1874.

[3] F. N. Otis on "Stricture of the Male Urethra," p. 9.

Anatomists have employed various methods for determining the calibre of the urethra, by experiments performed upon the dead subject. One of these methods consists in laying open the urethra by an incision along its entire length, and afterward stretching it out upon a flat board, and fastening it down with pins along the edges of the section. This has been done by Malgaigne, Jarjavay, Thompson, and others; and the specimen which I now exhibit has been prepared in this manner. It affords the following measurements, and is well adapted to display the *relative* calibre of different portions of the canal:

Meatus	21	millimetres.
Fossa navicularis	38	"
Three inches behind meatus	26	"
Bulb	30	"
Membranous portion	20	"
Prostatic portion	38	"

The best method of ascertaining the greatest possible distensibility of the urethra is undoubtedly that employed in 1852 by Reybard, who introduced into the canal an instrument having at one extremity a pair of steel blades, which could be separated by turning a screw at the handle, the distance between the blades being indicated by a steel hand upon a dial, as in Dr. Otis's urethra-meter. Successive parts of the urethra were submitted to the action of these dilating blades, which were separated in every instance as far as possible, without causing a laceration of the urethral mucous membrane. The greatest separation of which the blades were capable was eighteen and a half millimetres.

Upon examining, in the manner described, a subject sixty years of age, Reybard found: 1. That the meatus could be dilated, without rupture, to double its natural size.

2. That, in that portion of the urethra corresponding with the middle of the penis, the blades could be separated fifteen millimetres, thus indicating a circumference of forty-six millimetres.

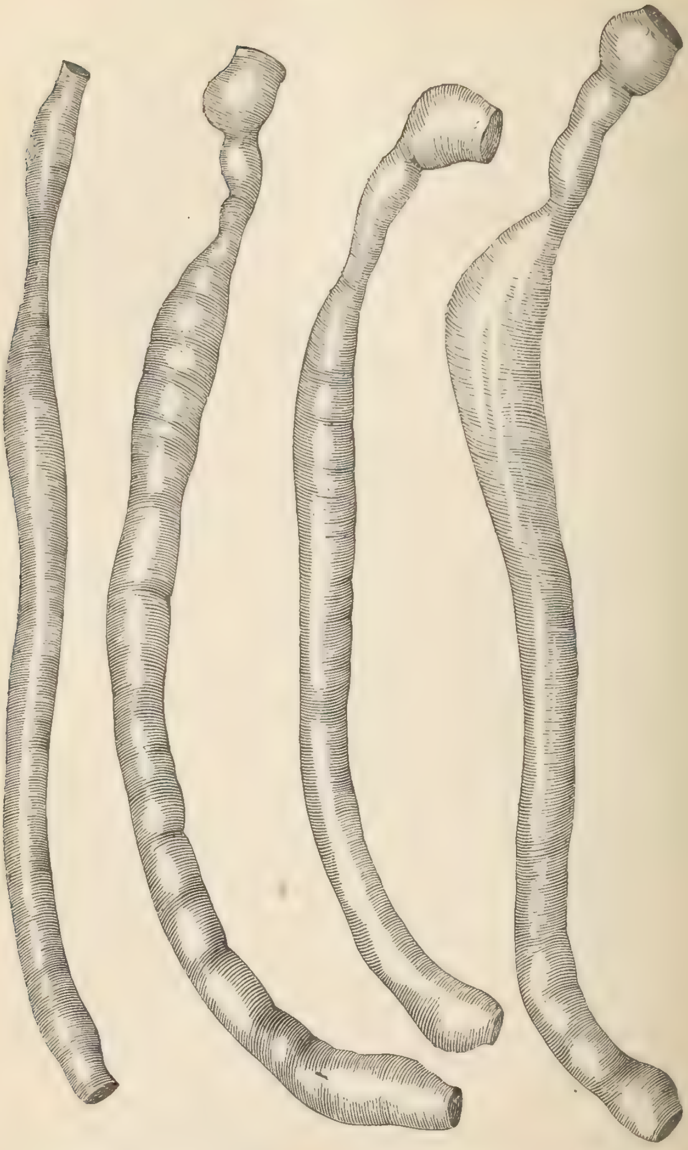
3. That in the bulbous, membranous, and prostatic divisions of the urethra, the instrument could be expanded to its greatest diameter, namely, eighteen and a half millimetres. This indicates, for all these parts, a calibre of at least fifty-eight millimetres.

On repeating the experiment in a subject of twenty-five to thirty years of age, Reybard found the same relative diameters in the different regions of the urethra, but found the diameter, in each of them, seven to eight millimetres less than in the older subject. I am not aware that any attempt has been made to ascertain whether the urethra of the living subject is capable of bearing such a degree of distention as was effected in these cases, yet I think it quite possible that the experiment would succeed if the dilatation were cautiously and gradually applied.

Another mode of estimating the calibre of the urethra is to obtain a cast of the canal, by injecting it with some kind of solidifiable material, such as fusible metal, plaster of Paris, or wax. I have tried all of these substances, and have found the latter to answer best. It is more manageable than either of the others, as it melts at a low temperature, and can be made to solidify quickly by being subjected to the action of cold water. Plaster of Paris does not run very easily when the mixture is thick, and when it is thin it is slow to harden. Fusible metal makes a firm and durable cast, but it becomes solid at so high a temperature, and so quickly, that we can seldom be sure the canal has been fully distended. The casts which I exhibit have been made for me by Dr. Charles McBurney, the able demonstrator of anatomy in the College of Physicians and Surgeons, who has bestowed much time and care in preparing them. The urethræ which they represent were free from any evidences of disease. In all cases the nozzle of the syringe was introduced into a pouch of vesical mucous membrane, obtained by making a circular incision through the membrane, about an inch behind the internal orifice of the urethra, and then dissecting it up from the subjacent parts. By this means the urethra is more certain to be thoroughly distended than when the injection is thrown into the bladder, while at the same time the canal itself is not interfered with. To secure a perfect cast of the external meatus, a similar plan was pursued in all cases but one. Instead of closing the meatus by suture, a portion of the integument of the glans penis was dissected up, thrown forward over the meatus, and then surrounded by a ligature. It thus formed a pouch which received and retained the injection after it had passed through the meatus.

In making such an injection, the amount of force employed may be greater or less; and, accordingly, the distention of the urethra will be much or little; but in all cases the entire surface will be subjected to *equal* pressure; and, consequently, although preparations obtained in this manner may not afford a certain test of the relative calibre of different urethræ, they offer a perfectly reliable indication of the relative calibre of the different portions of any given urethra. I exhibit to you four casts, each one representing the entire length of the urethra. Cast marked No. 1 was made by the employment of a moderately distending force. In obtaining the remaining three, as much force was used as it was thought the urethral walls would bear without rupture. The accompanying table gives the dimensions of different parts of the urethra as indicated by the different casts. In all instances the figures represent the circumference in millimetres.

Fig. 1.



The above drawings were made by Dr. Charles Heitzmann. The parts are represented two-thirds their natural size.

	No. 1. Æt. 40 to 50.	No. 2. Æt. 27.	No. 3. Æt. 40.	No. 4. Æt. 29.
Meatus	26	25	22	30
Fossa navicularis	30	44	40	43
Three inches behind meatus	32	36	35	36
Bulb	40	47	41	61
Membranous portion	20	25	26	30
Prostatic portion at its widest part	30	40	45	53
Internal meatus	18	35	50	40

Now, the comparison of these figures shows some curious results. Cast No. 1 is considerably smaller than the rest, and this fact may perhaps be accounted for by the moderate force that was employed in introducing the injection. The remaining three were all the result of the greatest distention it was thought safe to employ, yet they differ considerably in size, No. 4, especially, being larger than No. 2 or No. 3. I think it fair to assume that the varying size of casts 2, 3, and 4, indicates a corresponding variation in size in the respective urethræ, although it cannot be *proved* that the distending force employed in every instance was the same in amount. But assuming that it was so, or nearly so, we ascertain that the dimensions of the adult male urethra vary in different individuals. Whether these variations bear any definite ratio to the circumference of the penis, is a question that it will be convenient to postpone for the present. I will only add, in this connection, that the facts here demonstrated on the subject confirm the observations that have long ago been made by surgeons and anatomists, who have generally admitted differences in the calibre of healthy urethræ.

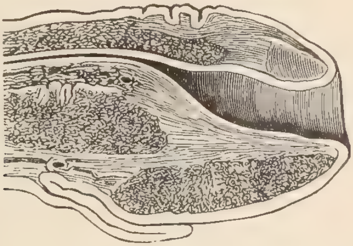
The table also shows that the calibre of the urethra, especially of its bulbous portion, is, in some instances, much greater than it would appear to be from any examinations which have ever been made to ascertain its size during life. This statement agrees with the results already obtained by Reybard, in the experiments I have alluded to.

But the special value of the figures is the unfailing indication which they afford of the want of uniformity in calibre of different parts of the same urethra. This is no new fact, yet the recognition of it is so important in the present discussion, that I may be pardoned for setting it clearly before you.

We notice, then, in examining any one of these casts, that it represents the urethra as displaying a series of alternating contractions and dilatations throughout its entire course. The meatus is generally contracted; then follows a dilatation, somewhere in the glans penis, the fossa navicularis; behind the fossa navicularis the urethra is again narrowed for a distance of several inches, when it expands more or less gradually to form the bulb; behind the bulb is a third contraction, corresponding with the membranous division of the urethra; and finally we reach the last dilatation in the prostatic portion, and the last constriction at the internal meatus. We thus observe three dilatations, namely, in the fossa navicularis, the bulb, and the prostate; and four contractions, these being at the meatus, behind the navicular fossa, throughout the membranous portion, and at the internal orifice of the urethra. These dilatations, as is well known, are all found along the inferior wall or floor of the canal. I note the fact, in passing, that, with one exception, these casts demonstrate the bulb to be the widest or most dilatable portion of the canal. The prostatic portion is said to be the most dilatable, but, owing to the firmness of the tissues which surround it, great force is needed to expand it. In cast No. 3 the bulb is not so wide as the prostatic portion, yet it is wider than any part situated in front of it.

These contractions and dilatations of the different parts of the urethra have long been familiar to anatomists, and have seldom been called in question. Their presence is tacitly denied, however, when it is affirmed that the calibre of the urethra is indicated by the dimensions of the bulb. The dilatation called the fossa navicularis was known to the older anatomists; it was described by Vesalius and Morgagni, and has been admitted by all authors with whom I am acquainted, except Amussat and Dr. Otis. Amussat denied its existence; but the arguments which he employed are by no means convincing, and have been fairly refuted. Dr. Otis also denies the existence of the fossa navicularis, and regards the presence of a narrow meatus as abnormal. He says: "Vertical sections of the penis, from the junction of the glans with the body of the penis, show a uniform calibre throughout the fossa navicularis to its external boundary at the meatus, the opening of which is of corresponding calibre. This may be accepted as the normal condition of these parts, and any variations from such uniformity may be considered aberrations from the normal condition."[1] Dr. Otis does not state, however, that he has ever made these sections himself, and he is in error when he quotes the authority of Henle in support of his assertion. The accompanying plate, which is borrowed from that anatomist's work,[2] is designed by its author to illustrate the arrangement of the erectile and other tissues in the glans penis; and, moreover, Henle[3] states distinctly in the text that the meatus and the membranous portions are the narrowest parts of the urethra. He gives seven millimetres as their average diameter. Now, the correctness of this statement is capable of the easiest demonstration. I am well aware that a very wide meatus is occasionally seen, but the opening is usually narrow when compared with the urethra behind it, and I cannot avoid the conclusion that Prof. Otis has mistaken the exception for the rule.

FIG. 2.



There is a peculiarity respecting the anatomy of the fossa navicularis, which I have not seen mentioned by anatomists, and which is illustrated by the casts now exhibited. I may remark that I have noticed the same peculiarity in the living body—I refer to the situation of this fossa. It is always found in the glans penis; but, while in some instances it is distant three-quarters of an inch or more from the meatus, in others it is placed almost immediately behind this opening. When it is situated at some distance from the meatus, that part of the urethra which lies in front of it is usually narrow, and of uniform diameter. When it is found directly behind the meatus, it appears as an abrupt dilatation, as in cast No. 3, when the meatus measures twenty-two millimetres, and the fossa navicularis forty millimetres, in circumference. In some cases, as in that represented by cast No. 1, the fossa navicularis is only slightly marked, but I have rarely known it to be entirely absent.

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[1] Dr. F. N. Otis, NEW YORK MEDICAL JOURNAL, April, 1874.

[2] J. Henle, "Anatomie des Menschen," vol. ii., p. 424.

[3] *Op. cit.*, vol. ii., p. 393.

Now, it may be objected to the statements I have thus far made, that they relate merely to the dead subject, and that the preparations which I have shown cannot indicate either the absolute or the relative calibre of the urethra in the living body. Accordingly, I have made some investigations with the view of correcting any errors that might have arisen from the study of the cadaver alone. I have been induced to proceed with great caution, however, in this matter, to avoid the injury to the urethra that might otherwise result.

In practice, we find in the size of the meatus a rough test of the calibre of the urethra. As this is generally as narrow as any other part of the canal, we assume that the largest sound it will admit ought easily to traverse the entire urethra, unless stricture is present. And this rule I have usually found a good one, although, when the meatus is exceptionally small, it may be desirable to enlarge it, either for the introduction of a full-sized lithotrite, or for the examination of a stricture which is not very tight. But, unless the meatus is unusually large, the *greatest* calibre or distensibility of the urethra cannot be tested by the largest sound that will pass through this opening, and I have found the ingenious instrument devised by Dr. Otis of great value in conducting this part of the investigation. I am unable, however, to obtain with the urethra-meter the same results as those recorded by Dr. Otis.

In the first place, I can discover with it no exact ratio between the calibre of the bulb of the urethra and the circumference of the penis. On the one hand, the circumference of this organ, even in its flaccid state, is liable to variation; and, on the other, the "feeling of fullness" that is said to indicate the distension of the urethra is, so far as I am able to appreciate, no reliable sign that the walls of the canal have been fairly stretched. I have carefully examined the urethræ of twenty healthy adults, and, with a single exception, I have succeeded in expanding the urathra-meter to its fullest extent, namely, forty-five millimetres, without causing pain or inconvenience. In many of these instances I have been able to move the instrument, while thus expanded, forward a distance of an inch or more, without encountering resistance. I infer, from these results, that the bulb of the urethra in the living subject is generally capable of greater dilatation than can be effected with the urethra-meter, and that this instrument has failed to prove the existence of a definite ratio between the calibre of the urethra and the circumference of the penis.

In the second place, I have always found, when the instrument was expanded so as to distend only moderately the bulb of the urethra—and yet more freely within it—that, on attempting to withdraw the instrument, it would be arrested about one inch in front of the bulb, and that it became necessary to reduce its size before it could safely be drawn forward. It would then pass on easily until its expanded portion reached the meatus, when generally a further reduction became necessary before it could be finally withdrawn. In short, while the urethra-meter, in my hands, has failed to indicate the exact calibre of the urethra, as compared with the size of the penis, it has shown variations in the distensibility of its different parts, corresponding with those which have been demonstrated by the employment of injections in the dead subject.

The application of these facts is at once easy and important. If they can be verified, they prove indubitably that the assumption of an unvarying calibre for any urethra is unwarrantable; and it is plain that such an assumption must lead to the gravest errors in practice. If the calibre of the bulb of the urethra be taken as an indication of what the calibre of all parts of the canal in front of it *ought* to be, I cannot understand why stricture will not frequently be diagnosticated when none really exists. And, when it is remembered that not less than fourteen strictures in the same urethra have been supposed to be revealed by this mode of examination, we may reasonably suspect, in the absence of *post-mortem* evidence, that there is something fallacious in the method employed. In fact, I am convinced that, when a healthy urethra, which has not been previously stretched, is explored, either with the urethra-meter, or with very large bulbous sounds, the instrument will often be tightly grasped at certain points, and communicate to the examiner a deceptive sensation, as if a stricture were present. This may possibly arise from one of several causes, as, for example, a deviation of the sound from the axis of the canal, a spasmodic contraction of the muscular fibres that surround the urethra, or a puckering of its mucous membrane before the instrument. Another explanation is suggested by certain interesting appearances in the urethral casts which I have just exhibited. Instead of presenting a smooth and even surface, they are often marked by slight transverse furrows and alternating ridges, indicating that the urethral mucous membrane, when greatly distended, yields more readily at some points than at others.

I should be sorry to have it inferred, from anything I have said, that I am opposed to the operation of internal urethrotomy for the cure of stricture. Some of the most gratifying results in modern surgical practice have been achieved by this method, but I believe it to be applicable chiefly to the treatment of close strictures, and as an auxiliary to dilatation. The dilating urethrotome, invented by Reybard many years ago, never met with general favor, on account of the accidents which attended its use, and the success of safer and milder methods of treatment. I am a firm believer in what, I fear, is becoming an old-fashioned doctrine among us, namely, that gradual dilatation is far the best treatment yet discovered for the great majority of urethral strictures. In regard to what are termed strictures of large calibre, I believe that they rarely exist, and that, when they do, they seldom cause the symptoms which have been ascribed to them. I fully indorse the statement made by Sir James Paget, who says: "Every year teaches me more and more plainly that a very large number of cases of stricture of the urethra are not really dependent on any fixed condition of the urethra, but upon mere swelling of its mucous membrane, upon just such swelling as, with chronic catarrh, narrows or shuts up one or both nostrils. Manual surgery should find little or nothing to do in cases such as these."[1]

I desire also to express my disapproval of the habitual use of *very* large sounds, as I believe that a sound exceeding twenty-five millimetres in circumference is rarely necessary, either for the diagnosis or treatment of a urethral stricture, and that a canal, even smaller than this would indicate, may permit the ready evacuation of the bladder. The fact that the urethra *can* be distended considerably beyond this limit is no proof that it ought to be, and unquestionably much evil may result from over-distention.

Finally, I cannot help thinking that the practice of slitting up the meatus, now so much in vogue among us, is injurious and irrational. The normal meatus is narrow, and its small size doubtless favors the projection of the stream of urine during micturition. When it is enlarged by a free incision along the floor of the urethra, the penis is thereby deformed, and a condition of artificial hypospadias is established. Except in special cases, therefore, it ought to be left as Nature has made it.

If, upon all these matters, I have stated my convictions somewhat emphatically, it is because I am deeply impressed with their important bearing in practice. My sole object has been to elicit truth; and, if I have ventured to criticise freely, I am willing that my own views shall be criticised in the same candid spirit.

ART. II.—*The Treatment of Chronic Dysentery by Topical Medication.* By R. B. MAURY, M. D., Memphis, Tenn.

IN the January number of this journal Prof. T. Gaillard Thomas published the history of a case of chronic dysentery, in which the most brilliant results were obtained by topical medication.

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[1] "Clinical Lectures and Essays," London, 1875.

Dr. Thomas states in his paper that the plan which he adopted was based upon an article written by me for the *Atlanta Journal* in 1872. As he could not find the article referred to, he very kindly urged me to give him a written synopsis of it, which he published in connection with the history of his case.

Since 1869, the date of the first trial of this mode of treatment, I have made use of it in fifteen cases. In one case the patient was so exhausted by the disease as to be beyond the power of recuperation, and died a few days after my first visit to him.

In three cases the treatment commenced was interrupted, either by my own absence for a protracted period from the city, or the necessary removal of the patient; but in all these it was eminently beneficial, changing the character of the disease, and enabling other treatment to complete the cure.

In eleven cases the results of treatment were perfect, the patients being speedily restored to health, and having since remained free from any bowel-disease.

In the *Atlanta Journal* for December, 1872, the history of eight of these cases is published. In the present communication I propose to report four cases of my own, not already published, and one by Dr. Henry Ess, of this city, treated upon the same plan.

I will premise this report with the statement that all cases referred to were unquestionably chronic dysentery, and not simple ulcer of the rectum; that they had all received the usual treatment for dysentery, without benefit, before being subjected to this method; that in no instance has the treatment been followed by any bad effects, but on the contrary the results, immediate and remote, have been of the most beneficial character.

CASE I.—On December 3, 1875, I saw for the first time a well-known physician of this city, who had been suffering with dysentery since the 26th day of June. Two applications of a solution of nitrate of silver, two drachms to the ounce of water, were sufficient to effect a complete cure in ten days.

This gentleman's case is here presented in his own words:

MEMPHIS, *December* 31, 1875.

R. B. MAURY, M. D.

DEAR SIR: At your request, I make the following brief statement of facts in reference to my recent illness: On the 26th of June, 1875, I was seized violently with acute dysentery. I made instant use of such treatment as seemed to me proper, or was suggested by several of our leading practitioners, without any beneficial effect. From day to day the disease continued, the remedies having no curative influence whatever. As the disease became chronic, nitrate of silver, in combination with opium, as well as sulphate of copper and other remedies, were taken internally. I also had recourse to suppositories containing opium, in combination with nitrate of silver, or Monsel's salt of iron; but they were nearly always passed off before being dissolved. In fact, I used everything to be thought of or suggested, which offered any prospect of relief. My actions for a long time were bloody mucus, but toward the close were chiefly blood. In the course of twenty-four hours I often had as many as forty operations, and the number rarely fell below twenty.

My usual weight is one hundred and sixty-five pounds. I lost flesh rapidly, becoming almost a living skeleton, of less than one hundred pounds' weight. I was in this condition when the first application of nitrate of silver was made by you. My subsequent history you are familiar with. I will only remark that the first application to the rectum had the effect of reducing the number of operations from twenty or twenty-five to five or six per diem.

After the second application to the rectum, on the 8th December, I never saw a trace of blood, and began to improve rapidly; and now, on the 31st of December, I weigh one hundred and thirty pounds, and am once more in vigorous health, having one or two natural actions daily, thanks to your timely and skillful aid. Your friend, JOHN TAYLOR, M. D.

This history sounds like romance, and yet it is true in every particular. On December 3d, the patient, feeble, emaciated, and with a pulse 120 to the minute, was helped from the bed to the table, and etherized by his brothers, Drs. A. K. and William V. Taylor. I then stretched the sphincter ani with the fingers, and after introducing a Sims vaginal speculum, and cleansing the rectum, I had a good view as far as the sigmoid flexure. In one place only was the surface ulcerated, and there superficially and transversely along one of the folds, but the mucous membrane as far as could be seen was thickened, congested, and of a deep-purple color, while around the margin of the anus it was much hypertrophied. The solution of nitrate of silver was thoroughly applied over this surface, and was carried by means of cotton on a piece of whalebone into the sigmoid flexure. This I think a matter of importance, because the sigmoid flexure is quite as often the seat of ulcerations as the lower portions of the rectum.

During the forenoon preceding this application, which was made at twelve o'clock, the patient had seventeen actions from the bowels; during the afternoon, two only. During the five days following the application, he had from three to five daily.

On December 8th he was again etherized, the sphincter stretched, and the solution of nitrate of silver applied as before. A great improvement in the condition of the rectum was manifest. After this application all traces of blood disappeared, and in a few days the discharges became natural. His food was milk and bread and beef-tea. No medicine was administered except twenty grains of bismuth three times a day for a week, and one-quarter of a grain of morphine hypodermically, on three occasions, to procure sleep.

Case II.—Mrs. B., aged fifty-five years, consulted me on September 19, 1875, for relief of dysentery, from which she had been suffering for nearly ten months. She had always been a delicate and feeble woman. I at once proposed topical treatment to her, but she declined to submit.

During September and October, she had two severe attacks of acute dysentery, and in my absence from the city was treated by my partner, Dr. Mitchell, with the large doses of ipecac. Relieved of the acute symptoms, she was in the same condition, as regards the chronic disease, as when she first came to me.

On November 5th she expressed a willingness to submit to the local treatment. She was now unable to leave her room, being in bed most of the time, and having between twenty and thirty discharges of bloody mucus during the day and night.

On November 7th she was etherized by Dr. Mitchell, and after stretching the sphincter, and introducing Sims's vaginal speculum, the rectal surface was brought into view as far as the sigmoid flexure. Several ulcers, of round or oval shape, with irregular outline, and of size varying from a silver half-dime to a dime, were seen on the rectal walls. The solution of nitrate of silver, two drachms to the ounce of water, was applied and the patient put to bed, with instructions to the nurse to administer a half-teaspoonful of elixir of opium when she came to herself. She was kept in bed, confined to a diet of milk and beef-tea with bread, and ordered to take fifteen grains of bismuth three times a day. Her condition improved at once. The number of discharges from the bowels, during the twenty-four hours following this treatment, dropped down to eleven, and for several days afterward averaged seven or eight to the twenty-four hours.

On November 13th, with Dr. Mitchell's assistance, the patient was again etherized, the sphincter stretched, and the same solution of nitrate of silver applied. The improvement continued more rapidly than before. All signs of blood disappeared; the number of actions during the week following averaged five or six in the twenty-four hours. The patient gained strength, and was allowed to go about her room.

On November 19th, with the aid of Dr. Henry Ess, the operation was repeated precisely as on the previous occasions, and again on November 27th, when all the ulceration had disappeared, except a small spot on the anterior wall.

The mucous membrane had now resumed its normal appearance, nearly. After this the patient gained steadily in strength, having only two natural actions a day. She continues well at date of this report (January 10, 1876).

I do not wish to convey the impression that all cases of chronic dysentery are thus readily and rapidly to be brought to a close. During the fall of 1873 I met with two cases which originated here in the months of March and June of same year. In May and June, 1873, it will be remembered, Memphis suffered severely from cholera. Chronic intestinal catarrh was a marked feature in both these cases, and, though the applications to the rectum removed the dysenteric symptoms, I had much trouble in curing the other disease, and preventing relapses. These cases will now be presented.

Case III.—Mrs. R. L., aged twenty-two years, was attacked with dysentery on March 15, 1873, about one month subsequent to her confinement. She was under my care, and in ten days was convalescent. One week later she relapsed. This was followed by repeated relapses, and the disease assumed a chronic form.

Being in bad health myself, and unable to attend to business, the patient passed into other hands.

On November 29th she again came under my care. Her condition was deplorable. She had been confined to bed with fever for several weeks. She was exceedingly emaciated, very feeble, and having ten or twelve dysenteric discharges in twenty-four hours.

The treatment consisted in opium suppositories, moist spongio-piline to the abdomen constantly, and the administration of milk, beef-tea, and brandy. Under this management she improved, and by Christmas was clear of fever and could sit propped up in bed.

Dysentery being now the principal disease (for she was having five or six bloody stools daily), topical medication was decided upon, and on January 12, 1874, a rectal examination was made.

Quite a large number of round or oval ulcers, the size of a split-pea, studded the rectum. The intervening mucous membrane was pale, and seemed but little if at all inflamed.

A solution of nitrate of silver, one drachm to the ounce, was applied to the ulcerated points, and with marked relief to the symptoms. The application was repeated on the 15th and 22d of January, and on February 11th, with entire removal of the ulcers, disappearance of blood, and lessening of number of stools.

Still the condition of the patient was not satisfactory. The stools were semi-liquid, with mucus, and great care was necessary to prevent diarrhœa. The effect of the applications was not decisive, as in those cases where the mucous membrane was decidedly inflamed, and set with ulcers of ragged outline and angry appearance. The patient was kept in bed, confined to a diet of raw meat and raw oysters with bread, and took twenty grains of bismuth three times a day. She steadily improved on this plan, but had two relapses on deviating from it. By the middle of March she was entirely clear of disease, and had no return of it. She is now in perfect health.

Case IV.—H. H. H., aged thirty-nine years, after being in feeble health for several years, was attacked with acute dysentery on June 20, 1873, at the close of the cholera season. Under treatment the disease abated in violence, but assumed a chronic form.

On July 4th he went to New Jersey, where he spent the summer, improving but little.

On December 5th he returned to Memphis, suffering from chronic dysentery, much broken in health, but able to go about a little.

A rectal examination on the 11th of December revealed a similar state of affairs to that described in Case III. Nitrate of silver was applied four times, at intervals of four or five days, and, though the patient would not absent himself from business during this time, and give himself proper care, his improvement was very marked. Late in January he relapsed and was confined to bed.

On the 4th of February the rectal applications were resumed, and repeated several times. Though the dysenteric symptoms were removed, and the number of discharges reduced to three or four in twenty-four hours, they were soft, and contained mucus. He was kept in bed, and received twenty-five grains bismuth three times a day, and one-fourth grain morphine, hypodermically, every night for ten days. His diet, during this time, consisted of raw oysters, raw meat, and bread. Milk he could not digest.

On the 10th of April he was well. He had no relapse. His general health became better than it had been for years.

In October, 1875, he was attacked with congestive remittent fever, after a visit to the swamps of Arkansas, and died in a few days.

In this case, as in Case III., there was other disease besides dysentery, and the influence of topical applications, though not so decisive as in my other cases, was very beneficial, and probably necessary to a cure. My impression is, the more marked the disease is in the rectum the more positive will be the results of topical medication.

The next case was a patient of my friend Dr. Henry Ess, whose report I take pleasure in publishing here:

CASE V.—E. T., porter in wholesale grocery-house, aged twenty-eight years, was attacked with dysentery in June, 1874. On July 10, 1875, about a year from the beginning of his disease, I was called to see him. During nearly the whole time of his illness he had been under medical treatment, and had had six physicians, but had derived no benefit. For many months he had had from ten to fifteen bloody and slimy discharges every day, and was now very greatly emaciated. On examining the rectum I discovered five ulcers, varying in size from a silver dime to a quarter-dollar. From this time to the 5th of August I made five applications to the ulcerated surfaces of a solution of nitrate of silver—one drachm to the ounce of water. After each application one-third grain morphine was given to relieve pain. His diet was not restricted, and he was not confined to bed. On the 5th of August I considered him cured. The ulcers had all disappeared, and the bowels moved once naturally in twenty-four hours. He resumed his duties as porter on the 15th of August, and continued to discharge them until the 5th of September, when he was attacked with acute dysentery. For this he was treated by me in the usual way until September 10th, when, as he was not improving, I yielded to his request to try again the nitrate-of-silver applications to the rectum. I found the rectum much inflamed, and on its anterior wall discovered an ulcer about the size of a silver quarter-dollar. Nitrate-of-silver applications were made on September 11th, 14th, and 21st, and the patient confined to a diet of bread-and-milk and soup. From this time he recovered rapidly, and has been steadily at work since early in November.

Dr. Thomas suggested to me the applicability of this treatment to acute dysentery which proved rebellious to ordinary modes of treatment. It will be seen that Dr. Ess made use of it, with great benefit, on the fifth day of the disease, and probably prevented the attack from becoming chronic, as it had done before. In connection with this point it should not be forgotten that ulceration begins in the very earliest stages of acute dysentery. This has been established by the researches of Dr. Parkes, in India, and it is probable that an examination of the rectum on the fourth or fifth day of the disease would, in most cases, reveal the presence of ulcers.

Any one seeing the results here reported will at once ask the question, "How is it possible that a few applications to the rectum can be instrumental in the cure of a disease which, in many cases, is commensurate with the colon?" The answer will be apparent, I think, from a consideration of the circumstances which invest every case of this disease.

Dysentery which does not yield to treatment in its acute stage is marked by the presence of intestinal ulcers, which are most abundant in the rectum and sigmoid flexure.

The effects of ulceration in the rectum are: 1. Excessively frequent contractions of the rectum itself, through reflex action; 2. Contractions of the colon, through the same physiological mechanism; 3. Contractions of the whole intestinal tract, including the stomach.

Following as consequences upon these contractions, gastric and intestinal digestion are imperfectly performed; the food, in a partially-digested state, is hurried along the alimentary canal, and, by irritating the mucous surfaces, gives rise to hypersecretion. Hence, in nearly all cases of chronic dysentery, we have also to deal with chronic intestinal catarrh.

It is often observed, after the dysenteric symptoms have disappeared, that the presence of a diarrhœa, or intestinal catarrh, will cause them all to return; the frequent movement and the passage of irritating materials over the weakened and sensitive mucous surfaces of the rectum being sufficient to rekindle inflammation and reproduce the ulcers.

In the treatment of all inflammations the one thing essential is rest. I would emphasize the fact that dysentery is prone to become chronic and inveterate because a surface is diseased whose function in health is to receive impressions and transmit them, by reflection through the spinal cord, to the alimentary canal. When inflamed, this surface is abnormally sensitive—it takes cognizance of the slightest impressions, magnifies and transmits them almost without interruption. It is contracting incessantly.

Dr. Thomas remarked upon an interesting and significant fact which I have repeatedly observed, viz., that the rectum is entirely empty when we examine it for the first time, with a view to applying remedies through the speculum. As the inflammation disappears, the sensitiveness of its mucous surface subsides, its capacity to retain fæces increases, and it is no longer in a hurry to get rid of its contents.

To cure the disease we therefore aim to destroy, temporarily, the susceptibility of this surface to receive impressions, so that it may be kept quiet itself, and may cease to disturb the functions of the upper bowels. This we accomplish by applying to the rectum remedies which are caustic or alterative in their nature, which are known to promote the healing of ulcers, and which lessen its aptitude to receive and transmit abnormal impressions.

After a trial of this method for six years, I have had such uniformly good results, and so few disappointments, that I now approach the treatment of chronic dysentery with as much confidence of success as I do that of any other curable disease chronic in its nature.

In closing this paper the following suggestions are offered to those who may be disposed to give the method a trial:

Proceed deliberately and carefully, as in any other surgical procedure. Always etherize the patient, and always stretch the sphincter ani. When properly done, these are both perfectly safe measures. The patient being etherized, the operator is enabled to explore the rectum and make his applications deliberately and thoroughly. Paralyzing the sphincter is not only necessary to complete any satisfactory exploration, but the quieting influence secured thereby to the rectum can hardly be over-estimated. Put the patient in Sims's position for uterine examinations, and use Sims's vaginal speculum for examining the anterior and lateral walls of the rectum, and the bivalve with hinges on one side for examining the posterior wall.

If much disease is discovered on examination, I would follow Dr. Thomas's example and use the nitric acid. If ulceration is superficial, and the mucous membrane not much hypertrophied, the nitrate of silver does well. The patient should be required to remain in bed for a week or two when the treatment has been entered upon, and restricting him to a milk and meat diet expedites the cure.

For some years, following the advice of Trousseau in the treatment of chronic diarrhœa, I have given large doses of subnitrate of bismuth, because of its controlling influence upon mucous secretions; and inasmuch as chronic dysentery is always a complex condition, being associated, in a way already explained, with chronic intestinal catarrh, the appropriateness of this remedy will be understood.

Art. III.—*Remarks on the Treatment of Septic Peritonitis, with a Case.* By C. C. Lee, M. D., New York.

On December 25th I saw, at Dr. Emmet's request, a married lady, aged thirty-one years, multipara, who had had one miscarriage, and after that well-marked pelvic cellulitis, which had left the uterus retroflexed and bound down by lymphatic adhesions.

For the latter cause she was under Dr. Emmet's care; but for several weeks she had been steadily losing flesh, and more lately had developed an annoying cough; rigors and profuse nocturnal sweats had also frequently occurred, and for these she had taken quinine freely, without relief.

A careful examination of the chest showed indications of commencing solidification of the apex of the right lung, but nothing to account for the severity of the symptoms. The patient was so much exhausted by the examination of the chest that no further investigation was then made. On the following day, in examining the abdomen, my attention was at once attracted to a well-defined rounded tumor which seemed to fill the abdominal cavity as high as the umbilicus; it was soft, slightly elastic, but not distinctly fluctuating, not tender on pressure excepting in the right iliac region, and so sharply defined that the fingers could easily be passed underneath its edge, and the mass be lifted forward against the anterior wall of the abdomen. The history of the case clearly pointed to suppuration of some of the viscera; but, as it appeared to me impossible that a pelvic abscess, or peritonitis with effusion, as extensive as this could exist without more abdominal pain and tenderness, a gradually-increasing hæmatocele originating in hæmorrhagic peritonitis of the pelvis was suspected. A vaginal examination, which was at once made, seemed to confirm this suspicion, as the *cul-de-sac* was bulging and tense, but not thickened or indurated, and with none of the distinctive "wooden" hardness of pelvic cellulitis. Dr. Emmet, who had not examined the patient locally for ten or twelve days, on account of a protracted menstruation which was now just over, was at once sent for, and reluctantly concurred in my opinion—the antecedent symptoms convincing him that some intra-abdominal suppuration must exist. The pulse at this time was 116, temperature 103° Fahr., the patient complaining of no pain whatever, even when the abdomen was roughly palpated; marked dysuria had existed during the two previous days, but was now diminishing, and both this and the harassing cough were relieved by a little codeine. In the evening of this day (December 26th) the pulse was 120, the temperature 104½° Fahr., which caused increased anxiety.

December 27th, 28th.—The same treatment was continued, viz.: codeine one-quarter grain with two grains quinine every four hours, a carefully-regulated milk-diet, frictions with hot whiskey and salt to relieve the night-sweats, and a thin flaxseed poultice on the abdomen, which felt tense and uncomfortable although not painful. Average of pulse 116, of temperature 103° Fahr.

29th.—The patient was a little nauseated, and the codeine was, therefore, stopped; two grains of quinine were given every six hours, a little porter-sangaree added to the milk-diet, and hot vaginal injections were ordered. Pulse 120, temperature 103° Fahr.

30th.—More discomfort from constipation was complained of, the bowels not having acted for six days; pulse and temperature unchanged, but the patient was a little feebler, from having had a restless night; milk-punch was added to the diet, and as small doses of codeine failed to quiet the abdominal discomfort, a laxative enema was given at four o'clock. No increase of the abdominal swelling or tenderness. In the evening the patient was seen with Dr. Emmet and found much relieved by the enema, but the pulse was 120 and more feeble, and the temperature 104¼° Fahr.

31*st.*—Was called up at 5 A. M. to see the patient, who had had a restless, painful night. I found her in great pain, which was referred mainly to the rectum, and which had gradually increased since about an hour after the previous evening's visit; a half-grain of codeine had been taken without effect, and, as the pain was rapidly increasing, ten minims of Magendie's solution were at once injected hypodermically. A careful vaginal and rectal examination showed a marked increase of pelvic pressure, and it was inferred that fresh hæmorrhage had occurred into the hæmatocele mass or that a pelvic abscess, which was strongly suspected to exist in the right iliac region, had suddenly ruptured and was producing general peritonitis.

The Magendie's solution soon quieted the pain; but, after the lapse of four hours, much nausea was produced by the anodyne, with more evidence of general collapse than could be ascribed to the opiate. Counter-irritants to the epigastrium and strong black coffee internally were freely used, but did not check the nausea, and, in spite of all that could be done, the patient continued to sink. At 4 P. M. she was seen by Dr. Fordyce Barker, who advised a continuance of the stimulation, and the subcutaneous injection of digitalis as a cardiac stimulant; this was given to the extent of twenty minims, without any perceptible effect. The collapse increased, and in two hours more the patient died.

At the autopsy, made sixteen hours after death, no trace of a hæmatocele could be discovered. The abdomen contained at least two quarts of sero-pus of the most offensive odor. The peritonæum was universally inflamed, thickened, and covered with shreddy lymph, matting together all the viscera, and a large pelvic abscess was discovered in the right broad ligament of the uterus, which had burst into the peritoneal cavity—probably at the time the rectal pains were complained of. The lungs and other organs were not examined.

Remarks.—I feel that no apology is necessary for publishing this case, as the diagnosis of septic peritonitis is far from settled by the most careful observers. The rigors, sweating, and nocturnal elevation of temperature, which commonly indicate its onset, were well enough marked; but the abdominal tenderness and pain, which, usually agonizing, are in some degree believed to attend every case of peritonitis, never existed for a moment until the rupture of the complicating pelvic abscess which preceded the patient's death. That this could not possibly have been the starting-point of the peritonitis was shown no less by the varying deposits of lymph (many of which were evidently old) than by the immense collection ot sero-pus which had previously existed. The probable cause of the insensibility to pain in these cases, of which all hospital physicians have seen instances, is the rapid obtunding of the nerve-centres by septic material which is so copiously and readily taken up by the absorbents. If this patient had not been the subject of former pelvic cellulitis, which predisposes to hæmorrhagic peritonitis or intra-peritoneal hæmatocele, and if she had not been struggling through an irregular and protracted menstruation, less stress would probably, have been laid upon the slight attending collapse and the absence of abdominal tenderness, and more weight would have been accorded to the indications of suppuration. The diagnosis of hæmatocele (with probable decomposition of the effused blood) was made by me from these data; but it is simple justice to Dr. Emmet to add that he concurred most reluctantly in that opinion, and from the onset retained the conviction that intra-pelvic suppuration existed.

Secondly, as to the treatment of such cases, I believe that they should never be treated expectantly. If the tumor rise above the brim of the pelvis—in this case it reached fully to the umbilicus—and, from its fluctuation, is evidently fluid, it should at once be punctured in the median line with an hypodermic syringe (as recommended by Dr. H. T. Walker for ovarian cysts), and the contents carefully examined. If blood, or even healthy pus, our policy should be to wait—always in the first case, and in the second as long as the symptoms show no increasing blood-poisoning or exhaustion. But if the obtained fluid be thin, offensive, flaky pus—as will nearly always be the case when the antecedent symptoms be such as above detailed —we have but one resource if we hope to save our patient. This is gastrotomy and the frequent washing out of the abdominal cavity with antiseptic fluids. This may be thought an heroic remedy, and surer to kill than to save a previously-exhausted patient; but it may be safely asserted, in reply, that the patient is sure to die without it, and—the peritonæum being already damaged to the full measure of its possibilities —there can be no greater objection to opening that membrane than obtains after the removal of abdominal tumors when similar measures have to be employed. If the suppurative process be confined to the pelvis, the opening may be made through Douglas's *cul-de-sac*, as suggested by Thomas and others; although the difficulty of keeping the opening pervious, and the inefficiency of all forms of drainage-tubes hitherto used, would incline me to resort to a shorter and lower abdominal section even in these cases. Schroeder,[1] indeed, in an address before the Physico-Medical Society of Erlangen, last May, asserts it as his conviction that "the abdominal cavity cannot be satisfactorily washed out through a simple incision in the abdominal walls." But as it has been successfully accomplished by Peaslee and others in this country in repeated instances, the objections of even so eminent an authority should not deter from the effort.

ART. IV.—*Description of a New Battery for Galvano-Caustic Surgery.* By BENJAMIN F. DAWSON, M. D., New York.

ABOUT six years ago my attention was first practically drawn to galvano-caustic surgery, by my late friend Prof. Joseph Kammerer, and subsequently I had the pleasure of assisting him in many operations for amputation of the cervix uteri. These and other opportunities enabled me to appreciate the value of the galvanic cautery for many operations, and on my return from Europe, in the fall of 1872, I brought with me the most approved form of battery then in use in London.

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[1] *See Medical Record*, September 25, 1875, pp. 646, 647, where a full statement of Schroeder's views on the etiology of septic peritonitis is given.

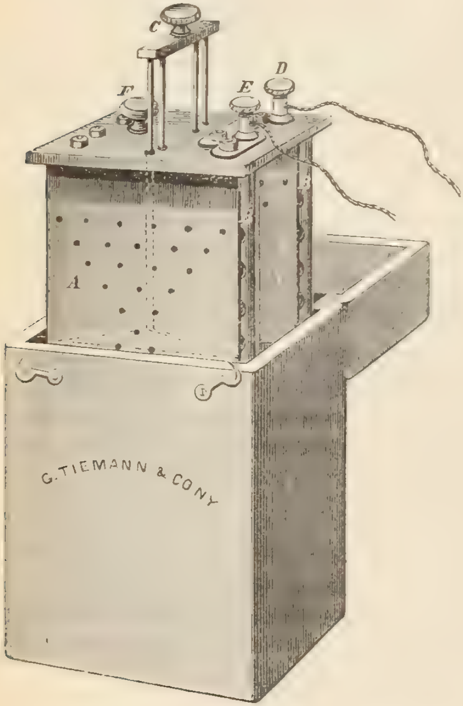
After considerable use of the English battery, however, I found there were two apparently insurmountable difficulties, which, it seemed to me, would prevent galvano-caustic surgery from being as generally resorted to as its great advantages urged it should be; these were the bulk and unreliability of the apparatus, to say nothing of the trouble of keeping the battery in condition for ready use. Fortunately, however, a few years ago, Dr. John Byrne, of Brooklyn, Long Island, gave his attention to galvano-caustic surgery, especially in gynæcological practice, and, realizing all the disadvantages connected with the expensive and cumbersome imported batteries, endeavored by studying out the subject, and making numerous experiments, to construct a battery which, if less bulky and expensive than the foreign batteries, should yet equal them in all other respects. It is not necessary for me to describe the results he achieved, excepting to say that he some time ago gave to the profession a battery so superior in all respects over any heretofore made on either side of the Atlantic, that "Byrne's battery" has long been looked upon as the final solution of the question, as the cheapest, most portable, and most powerful battery for caustic surgery.

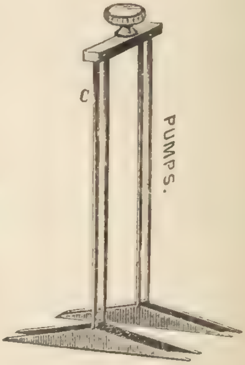
While Dr. Byrne was making his experiments, I was also turning my attention to the same subject, and from time to time made experiments, and repeatedly talked over the subject with Dr. Byrne, always with advantage to myself, owing to his perfect knowledge of the subject of electricity in all its bearings. Nearly a year ago I finally succeeded in constructing a battery, which differed from "Byrne's" in all respects, and at the same time was less expensive and bulky. This battery has now for some months been subjected to the severest tests as to power and reliability, and, having more than equaled my expectations, as well as those of others who have tested it, I venture to offer it to the profession as the result of efforts to place galvano-caustic surgery within the easy reach of those desiring to avail themselves of its advantages.

In all the batteries heretofore constructed, the negative plates have been composed of pure carbon, which constitutes one of the best, cheapest, and most durable conductors of electricity, without being affected by the acid in which it is immersed. In small, compact batteries, however, such as "Byrne's," carbon has the disadvantage of fragility, a slight jar or knock easily fracturing one of the carbon plates. The perviousness of the carbon also renders it difficult to keep the connections clean, as the acid soaks up to the latter, and corrodes them more or less. Again, the granular surface of the carbons is exceedingly favorable to the collection of effete matter, such as small hydrogen-bubbles and the sesquioxide of chromium, which collection sooner or later causes what is known as polarization of the battery, and consequently more or less insufficiency of power. Most of these difficulties Dr. Byrne has overcome in the construction of his battery, especially polarization, which latter he prevents by pumping air into the fluid after the manner of the French blast-battery, this agitation of the fluid removing the effete matter from the carbon or negative plates. Still, notwithstanding the great improvements Dr. Byrne made, my experience led me to look for still greater ones, and if possible to substitute some other material for the negative plates. After numerous experiments, I decided that platinum, as has been long known, was unequaled as a negative plate, excepting that, if used over a certain thickness, it increased the expense of the batteries too much to make them available to the majority of the profession, and if used too thin, it had the objection of heating, and thus causing the fluid to become hot, and even to boil, an objection too great to allow its use. However, this heating of the platinum plates I also finally succeeded in overcoming, by the simple device of bordering thin plates with lead, so that the current was thus taken off the plate on all sides, instead of having to traverse its whole length, for it is the resistance of platinum as a conductor that causes it to heat.

Polarization, also, I have obviated, by perforating the zinc plates, and by the very simple device of placing agitators between the negative and positive plates, whereby the hydrogen-bubbles and sesquioxide of chromium are removed with facility.

The battery, therefore, which I have devised seems to me, after prolonged trial, to meet all the requirements of a perfect galvano-caustic battery, and for compactness, durability, power, and cheapness, equals, if it does not surpass, any heretofore offered.





The battery shown in the accompanying illustration is composed of but two cells, made of hard rubber, in each of which are two positive (zincs) and one negative (platinum) plate, all measuring but four and a half by six inches. The zincs (*A*) are perforated by a number of small holes, and are adjusted half an inch apart, between them the platinum plates being adjusted, the lead borders showing at *B*. On each side of the platinum plate in each cell are rubber-covered metal pumps or agitators (*C*), worked by means of a small knob. *D* and *E* are the connecting screws. The entire battery requires but a little over a quart of fluid to exert its fullest power, with which amount it will keep up a most powerful action, long enough for the most prolonged operation, by moving up and down slowly the pumps or agitators (*C*). By this action, the old or exhausted fluid between the plates is thrown out through the perforations, and the outside fresh fluid takes its place, and by this polarization is wholly overcome, and, according to the degree of heat required, the pumps are worked more or less fast. In fact, this device develops so much power that it is possible to melt platinum instruments which other batteries only heat to a red heat.

In using this battery, the following must be carefully observed :

Fill each cell with acid to within one and three-quarters inch of the top, and then support the plates out of the acid by the upright which screws into the back of the box. Adjust the wire-conductors into the screw-cups, and bind tightly with the screws; then attach the wire-conductors to the electrode to be used. When ready to operate, lower the plates into the fluid, and, according to the degree of heat desired, work the pumps by means of the rubber knob slow or fast, *never violently or in other than a perfectly perpendicular direction*, but always elevate and depress them to their fullest extent. The moment the operation is finished, or there is any suspension of the same, lift the plates out of the fluid, and rest them on the upright; this saves the wear of the zincs and prevents exhaustion, heating and wasting of the fluid. If this cannot readily be done, the operator must open the connection in the handle of the electrode.

The wire-loop cautery should always be adjusted around the part to be removed, cold; and when firmly in place, heated. The other cauteries are best used when heated first. Always wash off the plates immediately after using the battery by pouring thoroughly over and between them; especially be careful that no trace of acid remains on the portions of plates close to the rubber-top plate.

If a very small cautery is used, fill the cells only half or two-thirds full, or lower the plates only to the second pin in the upright. A white heat will soften and melt the platinum cautery. Always see that all nuts and screws are tight. Never use fluid a second time, unless using a very small platinum cautery. Keep all connections clean and bright.

The zincs should be amalgamated after using the battery a few times; to do this, remove them by unscrewing the nuts, wash them in dilute sulphuric acid, at the same time rubbing them with a few drops of mercury, and wiping them off thoroughly before refastening them in their places.

DIRECTIONS FOR PREPARING ONE GALLON OF FLUID.

Hot water	106 ounces (fld.)
Bichromate of potassa	1½ lb.
Pure sulphuric acid	36 ounces (fld.)

Dissolve the potassa thoroughly, and add the sulphuric acid very slowly. Do not use the fluid until cold.

The battery is manufactured by the well-known house of George Tiemann & Co., No. 67 Chatham Street, New York.

ART. V.—*The Necessity of State Asylums for the Chronic Insane.* By EDWARD C. MANN, M. D., Medical Superintendent State Emigrant Insane Asylum, Ward's Island, New York.

FROM a thorough and extended examination of the reports of insane asylums, it seems to be very evident that we are building large, expensive institutions, fitted up with all the appurtenances demanded by modern science for the treatment and cure of insanity, and that as soon as such institutions are opened for the reception of patients they become filled with a class of cases, three-fourths of whom are chronic and hopelessly insane patients. It is no less evident that if proper provision is not made for this class of the insane, each State must build, every few years, a very expensive institution, for which every city and town must be heavily taxed. What are we going to do to relieve this rapidly-increasing difficulty? If this class of the chronic insane are well taken care of, they are going to live in this hopelessly insane state—from which, at the utmost, not more than ten per cent. will ever recover—for years, costing for their maintenance not less than $3.50 per week. It is a fact that every medical superintendent of an institution for the insane must have noticed, that the presence of this incurable class of patients exercises a very depressing and unfavorable effect upon the minds of the recent and acute cases. If a patient perceives upon admission that the population is made up principally of patients who have been inmates for years, and for whom no hope of cure is entertained by the medical officers, and that few patients go out restored to health, the moral effect must necessarily be depressing and disastrous upon the mind of such a patient, and tend to retard his own recovery. At present, many large, fine institutions, instead of being—as they were originally intended to be—*hospitals* for the treatment and *cure* of the insane, are merely *asylums* and *receptacles* for the retention of patients, at an enormous expenditure of money for architectural display. The overcrowding of such institutions by the retention of the chronic insane precludes the possibility of proper classification or proper ventilation. By transferring this class of the chronic insane and leaving the class of recent and curable insane, we derive many advantages. First and foremost, the patients understand that they are in a *hospital*, that they come to be cured of a physical disease, and that by submitting to the treatment and discipline of the institution they *will* be cured. Secondly, we have at our disposal ample room for proper classification, good ventilation, amusements, and recreation. I think every hospital for the insane should be so arranged that there should be a spacious amusement-hall, a good library, a good bowling-alley and billiard-room, and last, but not least, a pretty, tasteful chapel, with an organ, and religious services by a chaplain. In the hall devoted to amusements and recreation there should be held weekly, for such patients as are able to attend, musical, dramatic, stereopticon, and other entertainments, such as the medical superintendent deems best suited to the class of patients he has to deal with. It is a fact, which I have stated elsewhere, that insanity in its early stages is one of the most curable of serious diseases, and that, if treated promptly and properly, eighty or ninety per cent. of our patients can be cured. By providing such accessories as I have just mentioned, and amusements, we bring before the patient's mind new objects of attention and interest, which draw off the mind from the delusions that occupy it, combat depression of spirits, and induce a healthy train of thought, tending toward recovery. For the chronic and harmless insane we do not need so many attendants or such costly accommodation as for acute and recent cases. For the chronic insane we need plain but substantial buildings, which should, I think, be located on a large farm, so that the patients could all be employed out-of-doors. In this way these patients could be made producers, and could be supported at comparatively little expense to the State, and at the same time they would have the benefit accruing from a good, plain, country style of living, with an abundance of fresh air, sunlight, and regular and systematic occupation. By such a course of treatment many would improve in general health; and some would probably recover, who would never have been benefited if they had been confined in an asylum. Of the thousand patients admitted to the asylum for the chronic insane at Tewksbury, Mass., during the eight years of its existence, about one hundred have recovered or improved from out-door work, and the experiment is regarded as a decided success. The expense has averaged, I believe, not far from $100 a year for each inmate, and it is stated by competent authority that the patients are as well cared for as they were previous to their admission. The establishment in 1869 of the Butler Asylum for the chronic insane, in Rhode Island, was found to be a very successful experiment. It is a well-managed institution, and the trustees say, regarding it, that "its result is to enlarge the capacity of the hospital for the treatment of recent cases of insanity, and thereby to increase its beneficial agency as a curative institution." Quite a number of patients have recovered through the agency of the out-door work, and it is stated that the patients are better cared for than before coming to this institution. The annual saving to the State of Rhode Island is stated to be over $12,000, while the amount saved annually to the State of Massachusetts by the establishment of the Tewksbury Asylum is stated to be $25,000, or over $200,000 since its establishment. The Willard Asylum for the chronic insane, at Ovid, in our own State, regarded by many as an experiment of doubtful expediency, to say the least, has proved, under the skillful management of its able medical superintendent, to be a highly-successful measure. The trustees say in their last report, "The idea heretofore promulgated, that the chronic insane could not be so well cared for in a separate asylum, and that it was better to retain them in a hospital with recent and acute cases, has proved on trial here to be a fallacy." That other institutions are beginning to appreciate the difficulties arising from treating the recent and the chronic insane in the same institution, will be seen from the following. In the last annual report of the Medical Superintendent of the Lunatic Asylum at Charlottetown, Prince Edward Island, I find these remarks: "Of the sixty-four patients who remain in the asylum at present, nine-tenths are cases of chronic mania, from twenty-five years standing, down, and of whose recovery, or even material improvement, no hope can be entertained." No remedy, however, is suggested in this report for this state of affairs. I believe all will agree with me in thinking that the remaining *one-tenth* of the inmates, supposing them to be recent and curable cases, are to be sincerely pitied for their depressing surroundings.

In the last annual report of the medical superintendent of the asylum at Prestwich, in England, I find the following remarks: "From the returns of the clerks to the Board of Guardians, it would appear that up to the end of last year there were six thousand pauper lunatics in this county, while the increase for the past three years has been at the rate of nearly two hundred per annum. A very large proportion of the total number are hopelessly insane, and of the present inmates of this asylum not more than seven per cent. can with any confidence be pronounced curable. To deal with this steadily-increasing mass of lunacy is a problem which, as time goes on, becomes by its magnitude more and more difficult of solution. There can be no doubt that the only way of checking the growth of lunacy is by treating in properly-organized hospitals the recent cases as they occur, and that cannot be effectively done until our present asylums are eased of some of the dead-weight of chronic insanity which fills their wards and hampers their curative powers."

The great objection which has been urged by those opposed to the separation of the recent and chronic insane has been, that the latter, in institutions designed for them alone, would be neglected and abused, and that they would not receive proper medical attention and care. The results thus far obtained have not confirmed these fears. I hold that, under all circumstances, such an institution should be presided over by a medical superintendent of equal ability and capacity to those at the head of hospitals for the recent insane, and that no attempt should ever be made to put such patients on a poor, meagre, or insufficient diet, and that they should never be neglected or abused. By having these asylums located on large farms we secure to the patients, as I have previously remarked, occupation, fresh air and sunlight, and a good, nourishing, country style of living, and if there are any possibilities for recovery in any of the patients, such a plan of treatment will develop them. In the discussion of this subject at the conference of the Board of Public Charities, held at Detroit last May, in connection with the meeting of the American Social Science Association, Hon. F. B. Sanborn, chairman of the Massachusetts State Board of Charities, said that "there was no doubt in the minds of the Massachusetts Board of Charities that the separation of recent and chronic patients, proposed by Dr. Allen and by Dr. Mann, ought to take place. The principle was sound, and should not be discredited because of imperfect administration." Before closing, I desire to call attention to another class of patients who should, I think, be properly provided for in a separate institution adapted in construction for their special needs and appropriate treatment. I refer to epileptics, who are neither benefited themselves nor benefit others by their detention in an insane asylum. These patients do very well, and many of them are quite rational with the exception of a short time previous to and following the epileptic paroxysm. The other patients are disturbed, excited, and alarmed by the terrible convulsive spasms and the fearful cry attending well-marked epilepsy. Epileptics can be much better classified and treated in separate hospitals, and in such institutions, if properly conducted, would run much less danger of receiving the bodily injuries which so many epileptics suffer from when in an asylum, by hitting some sharp projecting angle of a bedstead or other hard substance. In a separate institution a great many special arrangements for the safety and comfort of this class of patients could be introduced, which would be impossible of introduction in the wards of an insane asylum. Epilepsy is a distinct disease, and should, I think, be treated as such as a specialty in a well-arranged hospital for epileptics. By their removal from insane hospitals we gain much additional room, and can devote our entire attention to the cure of the recent cases of insanity, which, as I remarked before, we should then be able to treat in a manner much more satisfactory to ourselves and to the friends of the patients, restoring from eighty to ninety per cent. to their homes, permanently cured.

Original Lectures.

Clinical Lecture on Pulmonic Consolidation from Pressure on a Bronchus; etc. Delivered in Bellevue Hospital, by Prof. A. L. Loomis, M. D.

Gentlemen: It is not often my privilege to present to you, nor, indeed, is it my fortune to see, many cases similar to the one I now bring before you. The history of the case I will recapitulate briefly. It is as follows: The patient, a man of thirty-five years of age, about three years ago was struck in his left chest by a package weighing two hundred and fifty pounds, which had fallen about fifty feet, and caused an injury at a point a little above the nipple. For ten days after this he was ailing, but after that was able to attend to his duties of a seaman till four weeks ago, though periodically he suffered from attacks of pain in the chest anteriorly and posteriorly. Four weeks ago he began to spit up blood of a bright-red color, but not more than a teaspoonful at any one time. The pain about this time increased in severity, but at no time did he have fever till he entered this hospital, one week ago. After admission to hospital he developed fever of a malarial type. He has now a cough, and this cough is not without its importance in a diagnostic point of view, for it is not of the laryngeal variety, not that of pneumonia, pleurisy, or phthisis, but is of a spasmodic kind, such as is heard in cases of membranous bronchitis.

After the patient has coughed for some time, he expecto rates a glairy mucus, and at times blood. The temperature on the diseased side is 102¼°. When we examine the chest there is no expansion on the left side, nor is there any vocal fremitus. On putting the ear to the chest on that side no respiratory sounds are heard, with the exception of a distant murmur of a harsh character. When we percuss the same side we get a note nearly flat; indeed, it may be considered flat. We thus have the signs of subacute pleurisy, but, when the heart is examined, we find it beating in its proper place, proving that the causes which give rise to the physical signs cannot be fluid. To settle this point absolutely, the needle of an hypodermic syringe was inserted and no fluid obtained. Now in regard to the diagnosis. We have to consider under what circumstances it is possible to have nearly all of the physical signs of fluid in the pleural cavity, with the exception of displacement of the heart, and yet no fluid. To my mind this can only be accounted for in one way—either a small aneurism, an enlarged gland, or some other agent, has, by pressure, obliterated the calibre of the left bronchus, and as a result we have pulmonic consolidation. Now, this at first seems strange, if not improbable, but when we consider the mechanism of it it will not appear so.

When obstruction of a bronchus, from any cause, takes place, there follows partial or complete collapse of the air-vesicles beyond; with the collapse of the vesicle there is a diminished pressure on the capillary vessels, resulting in their dilatation and increased supply of blood to the vesicle. Now, in accordance with a well-known pathological law, rapid cell-formation takes place, distending the lobule to its normal size, and giving us a condition closely resembling the third stage of catarrhal pneumonia.

I have seen three cases in which autopsies proved the result of the morbid process which I have described, and in all of them the cause of the pressure on the bronchus was due to an aneurism. When we listen closely to the posterior part of the chest near the scapula, we hear the heart-sounds distinct, and we hear also an indistinct bruit synchronous with the systole of the heart. While it is not improbable that this bruit may be caused by a small aneurism, we are not justified, so far, in making a positive diagnosis, though we may be justified in suspecting it. You may recollect that the patient spat up some blood occasionally, and you may be puzzled to know where it came from. I think it came from that part of the bronchus which is subjected to pressure, for continuous pressure at any given point along the line of a large bronchus would readily account for it.

In regard to the element of fever, which has been present in this case, we are justified in considering it to be due to malaria, for the reason that he has been sufficiently long under observation to come to a decision on the matter.

It may be, before the session is over, that additional developments will take place to render our diagnosis more positive.[1]

Jaundice; Catarrhal Inflammation of Bile Duct.—You will see many cases similar to the one now before us; the history obtained from this patient is as follows:

She says she has been sick for ten days, and that her trouble began with vomiting, and pain in the head. She says she never had chills and fever. You see that her skin is quite yellow, and on looking at her eyes you may see that the conjunctiva has the same hue. It may be well here to consider what gives rise to acute jaundice under ordinary circumstances, and what is the cause in the present instance. You know that there are two varieties of jaundice: 1. That in which the bile is secreted, and because of some obstruction is reabsorbed into the system. 2. That in which it is not eliminated from the blood by the liver. The second class includes the jaundice of malarial and other fevers, of acute yellow atrophy, of pyæmia, of cirrhosis, and of other diseases. But it is with the first class that we have to do at present. The causes of obstruction are, obstruction of the bile-duct from catarrh of its lining membrane, from the impaction of gall-stones, from pressure on it, from enlarged glands or cancerous or other tumors, and obstruction to its outlet by enteroliths or masses of hardened fæces. When we examine the abdomen there is no sign of tumor, and the patient says that she has not suffered any colicky pains. This decides for us that there are no tumors pressing on the bile-duct, and also that she has not passed any gall-stones. Moreover, no gall-stones have been found in her stools. On recalling the history, we find that she first suffered from nausea and vomiting, and afterward the jaundice developed. Now that proves pretty clearly to us that the patient was first seized with an attack of gastric catarrh. This catarrh extended downward and involved the duodenum, and from the duodenum it involved the bile-duct, giving rise to biliary obstruction, and in this manner to jaundice. At the present time the stools contain bile, or rather the coloring-matter of the bile, for bile itself is rarely found in the passages. There is but little to say in regard to treatment in the present case, as the patient is relieved of the obstruction, and is only waiting for the coloration of the tissues to disappear.

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[1] The verification of the diagnosis of this case will be found in the report of the proceedings of the Pathological Society.—*New York Medical Journal*, February, 1875, p. 183.

In any case but little can be done beyond forbidding the use of stimulants, or any other articles of diet which would tend to keep up the catarrh.

Angina Pectoris; Dilatation of the Heart.—It will be of interest to you to listen attentively to the history obtained from this patient, inasmuch as it presents a series of facts that can hardly be said to be very general. The facts which I have obtained by questioning him are, that fourteen years ago he was injured by a man jumping on his chest, and since that time he has found pain to be pretty constant about the lower part of the sternum. After six months the pain came on in paroxysms. These paroxysms would last twenty minutes, and when they appeared they were so severe that he had to stop any employment he was engaged in. He was never without a paroxysm for more than two or three weeks at a time; but within the past fourteen years he was able to continue his work, till two years ago. He then found that with a very little exertion dyspnœa was caused. During the past two or three weeks swelling of the feet appeared for the first time. When you examine his face there is nothing to indicate any disease. You may well ask, then, What pathological conditions are most likely to give rise to this train of symptoms?

This question can only be answered by an examination of the chest; but before doing this I may say that the history is typical of angina pectoris, and also typical of disease of the heart, for angina pectoris is a neurosis of the heart associated with cardiac lesions which give rise to an insufficiency of heart-power. When we listen to the heart we get evidences of mitral regurgitation, with aortic obstruction and regurgitation. There is also an increase of dullness, with lack of intensity of heart-beat, which leads us to diagnosticate *dilatation.* There is also a purring of the vessels, which would seem as if there might be an aneurism of small size. There are not, however, sufficient indications to make the diagnosis positive.

Now, to make the sequel of events plain, it is necessary to pass back into the history of the case. Originally there was endo-arteritis, due in all probability to syphilis, for the patient gives a history of that disease. Following that, and caused by it, were the obstruction and the insufficiency of the aortic valves. When the blood-current recoiled upon the healthy valves, the coronary arteries were completely filled and the cardiac walls sufficiently nourished; but as aortic regurgitation began to be established, the heart was imperfectly nourished, in proportion to the amount of the regurgitation.

Now, there followed the next step in the morbid process. When the heart-wall became imperfectly nourished and was subjected to the usual pressure, it yielded; in other words, it became dilated. The increased cavity of the heart caused an increased mitral orifice, and then there developed regurgitation at the mitral valves. It is in this condition the patient appears to-day. He now has reached the point where the lesions are beginning to affect him, and the prolongation of relative health and comfort depends on unremitting care. The danger is, that sudden death may ensue from distention of the ventricles, with inability to contract.

In regard to the treatment of the paroxyms of angina pectoris, very little can be done at the time to relieve the attacks. Digitalis must be considered as the best remedy. During the interval violent emotions and active exercise should be avoided. If the patient is debilitated, the indications are to restore him as far as possible and give the heart as much rest as is compatible with his comfortable existence. The diet should be so arranged as to exclude any agents which would tend to cause flatulence, for the immediate cause of flatulence is to impede the action of the heart and lungs by encroaching on the thoracic cavity.

Ascites; Differential Diagnosis.—I have here a woman with an abdominal enlargement, and I bring her into the amphitheatre more for the purpose of diagnosis than for suggestions in regard to treatment. The history that she gives is brief and imperfect. She says that at different times she suffered from attacks of inflammation of the bowels, and if that means anything it is fair to assume that she refers to attacks of peritonitis. In regard to her enlarged abdomen, the only history that can be obtained is that the swelling came on gradually, and was not preceded by swelling of the feet.

Now there are three causes which may give rise to an enlargement of the abdomen—first, air; second, fluid; third, a solid tumor. The first is readily disposed of, for on percussion we get a flat note, which precludes the possibility of tympanites. When we palpate the abdomen, we get fluctuation, and this excludes any solid tumor. We are now narrowed down to a fluid tumor, and having proceeded thus far we must decide whether the fluid is free in the abdominal cavity or is encapsulated, forming a cyst. If we are dealing with ascites the fluid will have a line of dullness varying with position, and, moreover, the resonance will be above when the patient sits up. The only exception to this rule is in cases of old peritonitis where there are adhesions binding the intestines down. Under these conditions it is obvious the line of dullness counts for nothing, for we cannot tell where the adhesions may be situated. When this patient is examined by percussion, resonance is found low down on the left side, though not at all on the right. This fact settles one of two things: either the intestines are bound down as I have suggested, or the fluid is contained in a cyst. At this stage of the diagnosis we must pause and consider one special variety of abdominal tumor. I mean the pregnant uterus; for, until that is excluded, we cannot proceed to the verification of the diagnosis. We find here a normal uterus both in regard to size and position; but, in order that there be not the shadow of a doubt, it is necessary to carry the sound up to the fundus. Having thus excluded pregnancy we can go on, and it remains for us now to evacuate a part or the whole of the fluid to complete the diagnosis.

In tapping a patient, either with ascites or an ovarian cyst, the operation is the same. The patient having seated herself on a chair, a many-tailed bandage is carried around the body. A slit is then made in the middle of it and a slight incision carried through the skin in the median line, so as to allow of the easy introduction of the trocar. As the fluid passes out, this bandage is tightened by the assistants dragging on the tails at either side.

We will now examine the patient again after the operation. No trace of an ovarian cyst can be obtained ; but when we investigate the liver, we find it diminished in size, irregular in outline, and in all probability in a state of cirrhosis. The diagnosis we thus arrive at is, that the patient has a cirrhotic liver, and, as a result of that diseased organ, imperfect circulation through it of the blood contained in the portal system. When the current of blood anywhere is checked, transudation takes place, and when that transudation takes place into the peritonæum it is called ascites.

Before closing my remarks on this case, I wish to say to you that the diagnosis of abdominal tumors presents a great many chances of error. I have seen in this very hospital the best diagnosticians fail, and fail too in cases not unlike the present. You need not hope, therefore, to make up your opinion when first you see the case, but it should be your purpose to aim at a diagnosis by exclusion. First, exclude *pregnancy*, *uterine* and *extra-uterine ;* then consider whether or not there may be an immense deposit of fat on the abdominal walls. You do this by lifting up the skin between your hands. Next think of tympanites. When you have gone thus far, decide by palpation whether the tumor is fluid or solid. If it is solid it is in all probability either a *fibroid of the uterus*, an *enlarged liver*, or an *enlarged spleen.* If it is fluid it is either *ascites*, an *ovarian cyst*, or *fibro-cystic tumor of the uterus*, a *distended bladder*, *hydatids of some of the viscera*, *pyonephrosis*, or *abscess.* The most common forms of abscess are, *abscess in the neighborhood of the ilio-cæcal valve, abscess the result of pelvic cellulitis*, and *abscess from disease of the pelvic bones.*

When you reach the point of diagnosis of a fluid-tumor you are then justified in aspirating the case and examining the obtained fluid by the microscope.

I have made these latter suggestions as hints, for the full consideration of them does not properly come within our province.

Clinical Records from Private and Hospital Practice.

I.—*A Case of Pseudo-Hypertrophic Muscular Paralysis.* By C. T. Poore, M. D., Physician to St. Mary's Free Hospital for Children, and Charity Hospital, New York.

The following case of pseudo-hypertrophic muscular paralysis is published as showing an advanced stage of this disease. F. W. was apparently a perfectly healthy and well-formed child at birth. All his brothers and sisters were noted, when children, for their well-formed and plump limbs, and this boy formed no exception; in fact, his mother especially noticed his calves, which were remarkable for their size. All his brothers and sisters are perfectly healthy. His mother lost one infant from diarrhœal trouble. The family history, on his father's side, shows a tendency to consumption, of which disease he died; but there is no history of any neurotic trouble. That on his mother's side is good, with the exception of a cousin who, when an infant, became entirely helpless, and at the age of thirty was no larger than a child of six years.

The subject of the following history began to walk at the same age as his brothers and sisters did, but was always clumsy, and had frequent falls; on account of his apparently healthy muscular development, nothing was thought of it, notwithstanding the fact that the difficulty in getting about, climbing, and rising from a chair, gradually increased. His friends did not become anxious about him until his seventh year. He then had an attack of what was called "meningitis."

After his recovery it was noticed that he could not use his hands so well as formerly, and that the difficulty in locomotion had increased — with this peculiarity, that he threw his shoulders and upper portion of his body backward, that he walked with his feet widely separated, and with a waddling, rolling gait, and that there was a marked incurvation of the spine in the lumbar region when in the erect position. He now began to walk on the anterior portion of his feet, being unable to plant his heels firmly on the ground. The skin on the lower extremities became mottled, and was easily chilled.

The muscles of his calves, and those in the lumbar and scapular region, were larger than normal, while his arms, forearms, and thighs, were diminished in size. His toes have never assumed that claw-like position so often seen in those with this affection.

At the age of thirteen he ceased to walk. In his fourteenth year he had some diarrhœal trouble; and in May, 1872, had an attack of pneumonia, preceded by frequent hæmorrhages from his nose, lasting some days. In September, 1874, he had another attack. Three years ago the paralysis of his lower limbs became so great that he lost all power of motion; one year later his arms and forearms were almost similarly affected. While there was an increase in the size of some muscles from his seventh year, there was at the same time an atrophy of others.

The history is one of continuous progress from the beginning. There have been fibrillar contractions noticed in the muscles of the scapular region and neck. With the exception mentioned above, he has always been well; and his appetite and digestion have been good.

Examination, January, 1876.—Patient is now nineteen years old; is of normal height; his mental condition is good; he has a very good memory. With the exception of his face, all the muscles of his body have undergone marked atrophy, so that he is literally reduced to skin and bone. There is a marked lateral curve of the spine in the dorso-lumbar region to the right, so that the crest of the ilium is in contact with the ribs on that side, causing troublesome excoriations. The feet are in the position of talipes equinus, with a bending of the whole foot inward, from the ankle-joint; this is due to the position they are forced to assume when he is sitting up. The muscles of the neck are small, and motion of the head seems limited to moderate flexion, extension, and a slight amount of rotation. He has no power of motion in his left arm, forearm, or hand, which rest motionless on the table of his invalid-chair. He has retained some power in his right hand, can move the fingers, and is able to write; but, in order to move the whole limb, he has to drag it along by working the fingers over the table.

There is contracture of both elbow-joints. He has no power of motion below the neck, with the exception of his right hand. All the muscles, formerly hypertrophied, have become atrophied, and there is now no distinction between those which, from the beginning, took on the atrophic change, and those formerly hypertrophied. There is hypertrophy of the *tongue*, which the patient himself complains of. His articulation is thick and indistinct.

The heart's apex beats considerably outside and below the nipple, and is evidently enlarged; its sounds are very indistinct, especially the first; pulse at the wrist weak. He is unable to help himself in any way; has to be turned in bed. He is unable to lie on the left side on account of a pricking sensation he experiences when he attempts to do so. Sensation perfectly normal. The hypertrophied muscles commenced to diminish in size when he ceased to walk six years ago.

To Dr. Samuel A. Fisk, of Northampton, Massachusetts, I am under great obligations for bringing the case to my notice, and for obtaining permission for me to study it. The case was first seen and recognized by him, the late Dr. John Dole, of Amherst, Massachusetts, and others, in 1866, when the patient was ten years old, and able to walk about, and a history of it would have been published some years ago by Drs. Fisk and Dole, with photographs, but for the sickness and death of Dr. Dole, and the removal of the patient from that vicinity before the paper and photographs were in readiness for publication.

In a recent letter from Dr. Fisk, he says: "It was when he was about ten years old that I saw him, and I well remember the peculiar attitude he assumed as he stood—his shoulders thrown back; his spine curved; and the peculiar strutting manner in which he walked with his legs apart, his knees somewhat bent, and his stepping on the ball and toes of his feet, his heels not touching the ground. His muscles bellied out, especially those of the calves, like hemispheres, making him look as though he was knotted up into balls. His appearance, at that time, was that of a fat boy with an enormous development of some, and, as I recall him, of most of his muscles."

In conclusion, I would draw attention to a few points of especial interest in this case: First, that the disease developed but slowly until his seventh year, when after his first illness its progress became rapid; secondly, the peculiar bending of the knee mentioned by Dr. Fisk, due probably to shortening of the gastrocnemii by the inter-muscular deposit of fat (this was very noticeable in the case reported by me in the NEW YORK MEDICAL JOURNAL for June, 1875); thirdly, the hypertrophy of the tongue and heart, the muscular tissue of which seems usually to escape this peculiar change; and lastly, the extreme degree of degeneration to which the muscles have been reduced, while the functions of the stomach, intestines, bladder, etc., have continued normal.

I regret that I was unable to test any of the muscles as to their electric condition, but, as I saw the patient some distance from the city, it was impossible to do so.

II.—*Case of Congenital Transverse Vaginal Septum.* By ELY VAN DE WARKER, M. D., Syracuse, N. Y.

I AM indebted to Dr. H. B. Pritchard, of Euclid, Onondaga County, for the opportunity of observing the following case:

In February, 1875, Mrs. W., of Clay, came to me and related the following history: Her age is eighteen years, occupation that of a farmer's wife. Began to menstruate at the age of fourteen years, and the periods have regularly returned every twenty-eight days since, each lasting about five days.

From the beginning of menstruation she has been a great sufferer, being confined to her bed nearly the whole period. The menstrual discharge shows itself in small quantity and of a bright-red color for the first day, with but little pain. As soon as the discharge increases in amount, the diseased character of the menstruation manifests itself. Pain, intense and intermittent, begins in the hypogastrium, in each inguinal region, and is prolonged down the thighs; the intermission coinciding with an increase in the quantity of discharge. As the quantity gradually lessens, the pain returns, to be again relieved by another gush of menstrual blood.

Aside from this periodical sickness the general health is good. Defecation and micturition undisturbed. In appearance she is a blonde, well developed and muscular. She has been married seven months, and the change in sexual habits has not had any apparent effect on the dysmenorrhœa.

On examination by the vaginal touch, the vagina was found to terminate in a *cul-de-sac*, by what appeared to be a membranous transverse expansion of the vaginal walls. Through and closely behind it could be felt a small, rounded tumor. An examination by the rectum revealed a uterus of average size and in a slightly retroverted position, the small tumor being recognized as the uterine neck. The occluding membrane could be felt through the rectum as a fleshy mass. My first impression was that the case was one of nearly imperforate hymen, which, being thick and elastic, had gradually yielded to the sexual approach; but, on inspection, hymenal remnants were to be seen at the margins of the vaginal vestibule, which excluded that theory. The external genitals were normal. On exposing the vaginal canal by the perineal retractor, the septum was seen identical in color and firmness with the vaginal wall and continuous with it. A careful examination with a probe failed to show any opening. The distance of the septum from the urethro-vaginal tubercle was 2.7 inches. I directed her to return for further examination during a menstrual period, as it was very evident that there was an opening somewhere in the dome-like roof of the vagina, otherwise menstrual fluid could not escape.

In about two weeks Mrs. W. returned. It was the first day of menstruation, and the fluid could be seen percolating from a small opening to the right and posterior to the vaginal axis. The opening was valvular, in a direction upward and forward. The end of the probe, being bent at a right angle, could be swept round behind the septum.

March 29th.—With the aid of Dr. Gregory Doyle, the subject was operated upon. A curved, probe-pointed bistoury was passed through the opening and carried forward about one inch, intersected at its termination by another incision at right angles, thus leaving two triangular flaps, which were removed. The os and cervix were now in view, and appeared healthy. The relations of the septum could be made out more clearly. The periphery of the posterior lip fused with the posterior margin of the septum, the recto-uterine vaginal *cul-de-sac* being thus obliterated. The anterior uterine labium was of average length.

January 25, 1876.—Subsequent menstruations have been nearly free from pain, but highly abnormal. At each period a menstrual decidua is cast off, either in large patches or entire. I have one in my possession which in all respects, both in thickness, color, and firmness, resembles the decidua of pregnancy.

The patient has returned to the care of Dr. Pritchard.

ART. III.—*Ligature of the Iliac Artery, for Aneurism of the Femoral.* By R. B. BONTECOU, M. D., Troy, N. Y.

A GENTLEMAN of strong frame and active habits, aged about sixty years, noticed a pulsating tumor in the groin, in April, 1875, which gave rise at times to pain and stiffness in the limb, but for which he did not seek advice until two months ago, when he consulted an electrician, who put him through a course of currents and rubbings, with the effect of temporarily diminishing the tumor and relieving the pain in the thigh and leg; but after repeated rubbings and manipulation the tumor rapidly increased in size, and a general tumefaction of the iliac fossa and thigh followed, with agonizing pain that deprived him of sleep and interfered with nutrition, and compelled him to keep the bed, with the affected limb permanently flexed.

At this juncture I was called to take charge of the case, and during ten days tried to get the man in condition to bear an operation; but morphia, hypodermically, was the only agent that controlled the intense pain; and that so impaired his nutritive processes that I proceeded to an operation without further delay. Right thigh and leg strongly flexed, pressure on the tumefied iliac fossa not tolerated for a moment, and abnormal pulsation could be felt high in the pelvis, giving rise to a suspicion that the aneurism involved the external iliac artery. A year previous, he had suffered for weeks with severe pain about the left chest, of such intense character that hypodermic injections of morphia were then given for its relief; and the opinion of the medical attendant was, that some disease of the heart, like angina, existed. This fact somewhat embarrassed me in giving an anæsthetic, although no physical signs could be recognized indicating disease of the heart; I gave ether, however, which acted well. Cutting down upon the right external iliac, I found it sunk in a dark mass, which fluctuated and pulsated as far up as the bifurcation of the artery, and made the process of passing the needle safely around the vessel a delicate one. It was, however, accomplished quite bloodlessly, and without injury to the peritonæum, and, when secured, the aneurismal tumor in the groin disappeared. Delirium and insomnia, which had already lasted nearly a fortnight, continued during the remainder of the day after the operation, and a prescription of bromide potassa and chloral hydrate, thirty grains of former to twenty grains of the latter, was ordered given, and to be repeated every fourth hour until sleep was obtained. The patient did not sleep until five o'clock on the morning following the day of operation, and had taken four doses of the medicine. At 10 A. M. I found him sleeping profoundly, and apparently sinking, and he expired at eleven o'clock, twenty-three hours after the operation.

Post mortem, forty-eight hours afterward, proved that all the organs of the body were in a normal condition, except an aneurismal sac of the right femoral artery, close to Poupart's ligament. The sac had been ruptured, and the tissues beneath the iliac fascia, and behind the peritonæum up as far as the diaphragm, and down the course of the vessel to the popliteal space, were filled with old extravasated blood, extending up the course of the psoas muscles. Underlying the artery, as far as the sacro-iliac junction, a mass of clots formed a prolongation of the aneurism. The peritonæum was healthy and entire, the ligature properly occluding the artery, and there was a firm clot one inch long on the cardiac side, none on the distal side, other than the old clots retained in the ruptured sac, which was found ruptured in its posterior aspect. The rude manipulation of the electrician probably produced this complication.

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

Circular Amputation of the Shoulder-Joint.—A boy, seventeen years of age, while working in a machine-shop, got his arm entangled in one of the belts and was jerked from the floor to the ceiling. When the arm was examined after the accident, an extensive compound fracture was found, which necessitated amputation. The operation was performed by the house-surgeon, Dr. J. C. Pennington, and at first the intention was to make a circular incision around the arm and not remove the head of the humerus. As the operation progressed, the bone proved to be so badly fractured as to demand its entire removal. No additional incision was made, but all of the fragments of the humerus, including the head, were enucleated. The immediate result of the operation was to leave a wound not more than two inches in diameter, which healed rapidly without any bad symptoms. The special benefit obtained from this variety of operation is to leave only a small granulating surface, but unfortunately the number of cases of injury of the arm for which amputation at the shoulder-joint is indicated, in which there is sufficient integrity of the tissues at the upper part of the arm to allow of this variety of operation, is small.

Separation of the Epiphyses.—To the ordinary practitioner, cases of separation of the epiphyses of the bones are rare, and it is only where a large number of surgical cases are under observation, as in a hospital, that the injury can be studied to good advantage. At the present time there are two cases of this species of fracture in the surgical wards: one, separation of epiphyses at the upper end of the humerus, and the other, separation at the lower end of the femur.

The first case occurred in a boy fourteen years of age. It was produced by falling on the shoulder. On examining the case, cartilaginous crepitus was obtained, and on pressing the arm inward the humerus was made to project outward. The case differed from one of fracture of the anatomical neck, in the fact that when the arm was rotated the tuberosities of the humerus did not rotate. It differed also from fracture of the surgical neck in being too high up, and from there being but slight displacement. The case was treated by reducing the fracture and applying a shoulder-cap and side-splint.

The second case of separation of the epiphyses happened in a boy aged twelve. The injury was received by falling from a coal-box to the pavement.

When he was examined in hospital, an effusion into the knee-joint was detected, and at the same time, on manipulating, cartilaginous crepitus was found near the joint, with a false point of motion. The case was treated by making extension and putting the extremity up in a fracture-bandage.

Fracture of the Anatomical Neck of the Humerus.—A patient, aged forty, received an injury to the shoulder, and, on examination, the diagnosis of fracture of the anatomical neck of the humerus was made. The reasons of the diagnosis were crepitation at the shoulder-joint, without depression below the acromion. When the humerus was rotated the tuberosities rotated with it, showing that the fracture was undoubtedly at the anatomical neck. On measuring the arm, a shortening of one-third of an inch was detected. The treatment consisted in the application of a plaster-of-Paris bandage over the arm and shoulder, so as to keep the fragments at rest and in position.

Impacted Fracture of Neck of Femur.—A difficult case for diagnosis was brought into Bellevue Hospital a few days ago.

The patient was a woman, forty-five years of age, who fell on her side. There was eversion of foot, but not as marked as is usually found in intracapsular fracture, and the impression that was first conveyed was dislocation into the thyroid foramen.

When the trochanter was examined it was found flattened, but the head of the femur was apparently in the acetabulum. No crepitus could be distinguished, and, from the suspected nature of the injury, rotation of the femur was contra-indicated. The shortening of the affected extremity was half an inch. The diagnosis of impacted fracture of the neck of the femur rested mainly on the flattening of the trochanter, on the partial eversion of the foot, with slight shortening, and on the fact that the head of the femur was in its normal position. The treatment of the case consisted in the application of a plaster-of-Paris bandage carried sufficiently far up to embrace the pelvis and keep the hip-joint immovable.

Treatment of Ununited Fracture in the Fibula.—It has been found that fractures of the tibia, when not properly reduced, are liable to result in a false joint, or rather the bony union seems to be delayed. Three cases of this class were under observation, and were treated by allowing the patients to walk about on the affected limb. After this method of treatment had been pursued for a short time consolidation took place.

When the false joint is freely movable, splints are applied to support the leg, but when there is only slight motion support is unnecessary.

ROOSEVELT HOSPITAL.

Diphtheria involving the Smaller Bronchi; Tracheotomy.—The following case is of special interest at present, when the advantages of tracheotomy in diphtheria are freely canvassed. It seems also to prove that in cases of dyspnœa from diphtheritic exudation into the air passages the operation of tracheotomy is imperatively demanded. As the sequel of the case proved, the operation eliminated one important symptom of the case—dyspnœa—but did not influence the course of the disease.

A child, three years of age, was admitted into the hospital in apparently a moribund condition. The dyspnœa amounted to cyanosis. At first any operation was deemed inadmissible; but, at the urgent solicitation of the parents, tracheotomy was performed. After the immediate effects of the operation had passed off, the child was so far improved as to sit up in bed and play. He then took milk freely, and was apparently doing well. This favorable state of the patient continued for thirteen hours, when he died suddenly from paralysis of the heart. At the *post-mortem* examination the diphtheritic membrane was found to have invaded the larynx, trachea, and even the smaller bronchi. No sign of redness or of false membrane was discernible on the fauces, nor were the glands of the neck enlarged. Diphtheria had existed in several members of the family, and very shortly before another child had died of the disease. The child had been ill for five days, and complained from the outset of difficulty of breathing.

Delirium Tremens; Treatment with Lupuline.—Lupuline in large doses has proved efficacious in combating the insomnia of delirium tremens. One man, an athlete, had been unable to sleep for ten days, and it was decided to administer to him large doses of lupuline—three drachms were given in eight ounces of ale every two hours. During eight hours he had taken nine drachms of the drug, and at the end of that time he went to sleep. The usual dose is two drachms every two hours. The remedy has been had recourse to successfully in six cases.

Counteracting the Nausea of Opiates with Belladonna.—Acting on the known advantage of uniting atropia with morphia in hypodermic injections, Dr. Green, the house-physician, tried the combination of belladonna with opiates in their administration. His method is, to use rectal suppositories, each containing two grains of opium and two grains of the extract of belladonna. No nausea follows the use of opium when thus administered, and it has been used in a sufficient number of cases to prove its advantage.

MOUNT SINAI HOSPITAL.

Typhoid Fever; Treatment with Salicylic Acid.—Salicylic acid has been used with marked benefit in reducing the temperature in typhoid fever, though it seemed to be given without advantage in fevers of the hectic variety. One case of typhoid had progressed badly for three weeks. Baths had been administered at intervals, but the principal result obtained was the depression of the temperature for a few hours after such baths. It was decided to administer salicylic acid as an experiment, and for this purpose fifteen grains of the drug were given every two hours. Before administration the temperature was 106°, and twenty-four hours after it had fallen to 101°. After two days convalescence occurred.

In another case of the same fever the salicylic acid was given in sixty-grain doses once a day. The temperature fell from 104° to 101°, and at the end of two days the patient passed into convalescence. The remedy has been used so far in four cases, and in each with success.

The method of administration is fifteen grains given every two hours. In one case transient deafness came on, caused apparently by the acid. In giving salicylic acid, the solution is found the most acceptable to the patient, as the bulky character of the powder is liable to give rise to nausea.

Salicylic Acid in Rheumatism.—Dr. J. Rudisch, the house-physician, has tried the effects of salicylic acid in rheumatism, as well as in typhoid fever, and with good results. He gave one scruple every hour, and found that it lessened the rheumatic process, and cut short the disease.

NEW YORK EYE AND EAR INFIRMARY.

Retinitis Pigmentosa.—A patient presented herself at the Infirmary with the rare condition of retinitis pigmentosa. She was a deaf-mute, thirty-eight years of age. The disease has usually been found in patients whose parents were related by ties of consanguinity, but no such complication existed in the above case.

Considering the extensive changes that have taken place, the vision is fair, being $\frac{20}{200}$. The prognosis, however, must be very unfavorable.

An interesting point in connection with the patient is that, although she is a deaf-mute herself, her daughter has no defects of voice or hearing, nor any impairment of vision.

Myopia as a Result of Cataract.—A woman, aged forty-seven, came under observation, suffering from commencing cataract in the right eye. Previous to symptoms of cataract, the vision was good for distant objects, but since an opacity appeared on the lens of the right, the patient began to fail to distinguish clearly objects at a distance with the left eye. At the present time the ophthalmoscope and test-glasses indicate a myopia of $\frac{1}{24}$ in the left eye.

The important question involved in the above case is, whether or not the slight myopia coming on so late in life was caused by the increased strain on the single eye.

As a rule, the refraction of the eyes is fixed about the time the frame has ceased to grow, but there are cases, and probably the above is one of them, in which myopia develops after twenty-five years of age.

Cataract the Result of Change in the Vitreous.—A patient, aged fifty, on examination, presented a very high degree of myopia, with opacities of the vitreous and commencing cataract.

The cataract is on the posterior part of the lens, and the inference is, that the degeneration of the vitreous has so far modified the nutrition of the lens as to induce cataract.

Correspondence.

THE NEW SPHYGMOGRAPH.

22 Hawthorne Street, San Francisco, Cal., *January* 31, 1876.

Editor New York Medical Journal:

Sir: Having my attention lately called to the able article by Dr. Keyt, in the January number of your Journal, on "The New Sphygmograph," and as that article is likely to mislead the readers of the Journal, and others to whom it may be quoted, as to who the original and first inventor of the "new sphygmograph" is, I take the liberty of writing you a few lines explanatory of its history. That Dr. Keyt cannot claim priority of publication of the character and principles of that invention is evident from a perusal of the "Transactions of the Suffolk District Medical Society," appearing in the *Boston Medical and Surgical Journal* for December 23, 1875. At the meeting of that Society held on the 27th of November, 1875, Dr. E. A. Pond, of Rutland, Vt., who was present as a guest, showed and explained an instrument he called a sphygmoscope; he also remarked that a recording attachment had been added, so that the instrument was at once a sphygmoscope and a *sphygmograph.* That this sphygmoscope and the sphygmometer of Dr. Keyt are identical there is no question, and that the combination into a sphygmograph, as explained by Dr. Keyt in his article, had long before been used by Dr. Pond, I am prepared to show. Perhaps, before stating how long this instrument had been used previous to the publication of Dr. Keyt's article, it may not be out of place to mention that on the 6th day of April, 1875, letters-patent on the same combination were granted by the United States to Dr. Pond, as the following quotation from the patent, descriptive of the invention, will show: "*A permanent record of the vibrations can be obtained by means of a writing or recording apparatus connected with and operated by a delicate membrane stretched over the enlarged end of the terminal tube. The instrument would thus combine with its other functions the function of a sphygmograph.*" I will add, further, that a patent granted to myself on September 14, 1875, covers several other combinations of that principle to that end, whereby the construction can be much simplified. I have used both the sphygmoscope and sphygmograph of that construction since September, 1874, at which time Dr. Pond and myself were corresponding upon that subject, while he had used them previous to that time, as many of his friends can testify, who, in company with himself, made numerous experiments with them, fascinated by the beauty and delicacy of their working and the simplicity of their construction. Thus, in each and every particular, has Dr. Keyt been preceded by Dr. Pond; and, although wide publicity has been given the invention by Dr. Pond and myself, by showing it to several medical societies and many medical men, both on the Atlantic and Pacific coasts, I would not for a moment doubt the honesty of Dr. Keyt in his assertion of originality, though the latter portion of his article would lead one to suppose that he was not entirely ignorant of Dr. Pond's claim.

Hoping these lines may find a ready insertion in your journal, I am, Very respectfully yours,

WALLACE R. POND.

Proceedings of Societies.

BOSTON SOCIETY OF MEDICAL SCIENCES.

Report of Proceedings from September to November, 1875.

JAMES J. PUTNAM, M. D., *Secretary.*

Tuesday, September 28th.—Dr. WEBBER read a paper upon "A Case of Lesion of the Median Nerve, with reference to the Distribution of that Nerve." He referred first to the recent observations of Richelot, Bernhardt, and Létiévant, of whom the first two had found the distribution of the median nerve on the back of the hand to be limited to the last two phalanges of the index and second fingers, and the radial border of the same phalanx of the ring-finger. According to Létiévant, these limits are not always exactly the same: on the back of the hand the last phalanx of the thumb is sometimes affected, sometimes not, with the prickling, etc., from injury to the median nerve; and on the palmar surface the distribution of the nerve sometimes ends with the *radial* border of the second finger, sometimes with that of the ring-finger.

The patient observed by Dr. Webber had sustained an injury to his median nerve, first discovered when he awoke in the morning after a heavy sleep which succeeded a hard day's work at his trade, that of stitching boots. Certain motions of the hand and arm were impaired, and there was a subjective feeling of prickling and tingling referred to the radial side of the palm of the hand, the palmar surface of the thumb, index and second finger, and radial side of the ring-finger; and, on the back of the hand, to the dorsum of the last two phalanges of the index and second finger; also to the central portion of the inner side of the forearm as high as the elbow.

The motor paralysis was not absolute, and perhaps the action of the muscles affected was supplemented by that of unaffected muscles in the manner described by Létiévant.

The etiology of the case was stated to be obscure. It was difficult to sse how this nerve could have been compressed during sleep, and yet no other cause was apparent. Dr. Webber thought it possible that the nerve might have been irritated at the elbow through the prolonged use of the pronator teres.

Dr. Putnam spoke of the frequency with which such cases present themselves (the musculo-spiral nerve being, however, much oftener affected than the median), when, to all appearance, prolonged though slight pressure has caused paralysis of a single nerve of the arm, as, for example, during sleep, when the nerve is not immediately in contact with a hard object like the back of a chair, etc., but where, so far as can be learned, the arm simply lies under the body or is in an awkward position. He referred to a case of his own where wrist-drop, on one side, had followed a sleep in which the head rested on the hands and the elbows on the knees. Dr. Webber thought that in this case the paralysis was probably not due to pressure on the nerve, but to the unnatural position of the wrist, which was attended with pain and irritation.

Dr. Blake exhibited an apparatus devised by Hagen and Stimmel, of Leipsic, for examination of the ear by polarized light.

Tuesday, October 26th.—Dr. Hay showed an apparatus by which the rotation of a plano-cylindrical lens about its axis could be effected and measured, and the increase of refractive power of the lens, when placed obliquely, could be demonstrated. By the axis of the lens is meant a straight line parallel with the geometrical axis of the cylindrical surface, but lying in the lens along its thickest part, in the case of a plano-convex lens, and along the thinnest part in the case of a plano-concave. By means of this apparatus the axis of the lens to be rotated is fixed perpendicular to, and intersecting the axis of, a straight tube $1\frac{1}{2}''$ in calibre. The tube rests on a firm support, and may be rotated about its own axis, so that the axis of the cylindrical lens may be brought into any desired position, while the power of this lens may be altered by varying the degree of its obliquity. The length of the tube is about 4″, and the oblique lens is held by a framework at about 2″ from one end of the tube. Between the oblique lens and the tube is a frame for another glass, spherical or cylindrical. If into this last frame, which is about 1″ farther from the eye of the observer than is the oblique cylindrical lens, we put a concave cylindrical lens ($-\frac{1}{12}$ C) with its axis vertical, and if we then put into the frame for the lens which is to be placed more or less obliquely a convex cylindrical lens ($+\frac{1}{70}$ C), its axis being also vertical, and the two glasses being at first both perpendicular to the line of vision, the objects seen through the combination will be indistinct. But, if, while the $-\frac{1}{12}$ C. remains as before, we rotate the $+\frac{1}{70}$ C about its vertically-placed axis through 60°, we shall then see objects through the combination as distinctly as with the eye alone, though some light is lost in passing through the glasses. Thus the power of the oblique lens in the horizontal plane has been very much altered by the rotation, while in the vertical plane its power has not been materially changed, as might be shown upon considerations belonging to geometrical optics. In the experiment above described a weaker glass than the $-\frac{1}{12}$ C might have been used, and have been neutralized by rotating the $+\frac{1}{70}$ C by a less amount. As the apparatus allows the axis of the oblique lens to be turned into any direction in a plane perpendicular to the line of vision, it may be of use in some cases in selecting the glass for astigmatism.

Dr. WARREN showed two microscopic sections, illustrating a point in the anatomy of the skin, to which he had called attention at a previous meeting, when exhibiting a specimen of round-cell sarcoma, involving the skin. It was then observed that the disease penetrated to the surface by vertical and parallel channels, which were found to contain the remains of sweat-glands and hair-follicles imbedded in the diseased tissue.

Sections of the adjacent healthy skin had shown columns of fat-cells penetrating the cutis as far as the base of the lanugo hair-follicles. In some instances these columns were of considerable length, their long axis being at a slight angle with that of the hair-follicles, but nearly parallel to that of the erector-pili muscles. In many instances sudoriparous glands were seen beneath the hair-follicles, and suspended, as it were, in adipose tissue. A section of the skin of an infant, one of the specimens under the microscope, showed a similar structure, and a section from the skin of a rat, also exhibited, showed parallel rows of large fat-cells, extending from the deeper portions of the lip to the base of many of the hair-follicles.

A section of a nævus, excised from an infant, showed that these columns of fat were the earliest portions of the cutis to be invaded by the disease. It having been suggested that this was the route of the lymphatic vessels, Neumann was quoted as saying that the distribution of the lymphatics of the skin was in a plane parallel to the surface rather than vertical.[1] It was thought possible that these structures might facilitate the action of the erector-pili muscles. It was quite evident that they offered less resistance to the advance of diseased elements penetrating from the subcutaneous tissue to the surface, than the dense fibrous portions of the cutis vera.

How frequently this arrangement was to be found in the skin Dr. Warren was unable to say. Sections of the skin given, in various works consulted, show no such formations.

In reply to Dr. Edes, Dr. Warren said that he could not as yet say whether this arrangement was found in other parts of the skin than those referred to.

Dr. Wadsworth reported an observation that he had made while examining, in Dresden, the eyes of a child, in whom the sphincter iridis was in a paralyzed condition as a consequence of diphtheria. The child was at first asleep, and as Dr. Wadsworth drew apart the eyelids the pupil was seen to be contracted. As the child awoke, however, although facing a bright window, the pupils dilated, and assumed their usual fixed condition. Dr. Wadsworth knew of no good explanation of this phenomenon, but suggested as possible that the sympathetic nerves might be regularly inactive during sleep.

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[1] "Zur Kentniss der Lymphgefässe der Haut," von Dr. Isidor Neumann.

Tuesday, November 30th.—Dr. FOLSOM read a communication (of which the substance will be given elsewhere), illustrated by large diagrams, showing the position of the groundwater in various parts of the city, and its changes during rains, etc.

The observations had been initiated by him, and carried out, during his absence in the summer, by other persons. Long tubes had been driven into the ground at seventeen different points, and the level of the water within them systematically noted.

Dr. BOWDITCH showed an induction apparatus, of which a model had been exhibited at the May meeting, its peculiarity consisting in the fact that the intensity of the current could be diminished by rotating the secondary coil round a vertical axis, after it had been withdrawn to a sufficient distance from the primary, in this way allowing great economy in the length of the machine, and rendering it possible to reduce the current to an absolute zero. Each movement of the secondary coil could be measured upon a scale over which an indicator traveled, and which was designed also to bear a calculated scale, giving the exact intensity of current corresponding to each position of the coil. The curves, calculated in the manner formerly described, from which this scale was to be made, were also exhibited, and the peculiarity of their form corresponding to the two different motions of the coil pointed out. That part of the observed curve which corresponded to the rotation of the secondary coil was shown to differ less from the regular curve of the cosines than had been anticipated.

BROOKLYN PATHOLOGICAL SECTION.

Stated Meeting, December 23, 1875.

Dr. RUSHMORE presented a specimen, with the following history: Mary Tilly, aged thirty-nine, was admitted to St. Peter's Hospital (service of Dr. Bates), October 29, 1875, having, three weeks previous, fallen down a short flight of steps and struck violently on the buttocks.

When picked up she was paraplegic; retention of urine lasted four days, and gave place to incontinence of both urine and fæces.

On admission, was found paraplegic completely on left side, nearly so on right side; transmission of sensation very slow; faradic contractility lost. Bullæ were found all over both feet, and the end of second toe of right foot was sloughing (not from pressure, however), and a large bed-sore existed over the sacrum. Temperature 99.5°, pulse 108; marked anorexia and insomnia were present; she was given chloral; and Brown-Séquard's method of alternate ice and hot poultices was used for sloughing tip of toe, with good results. On close examination of the spine, a few days later, with a view to trephining, if indicated, the spinous process of second lumbar vertebra was found flattened, but no operative interference was deemed advisable. The subsequent history of the patient was like that of most cases of spinal fracture; severe pain and spasm of legs succeeded soon, and by November 24th she required much morphia to make her condition endurable. She gradually failed up to her death, on December 16th, having then passed to the service of Dr. Rushmore.

The specimen consists of the tenth, eleventh, and twelfth dorsal vertebræ; the eleventh being crushed and splintered by force applied vertically, and reduced to one-half its normal vertical thickness, thus compressing the cord, the membranes of which showed signs of inflammation.

Dr. Sherwell related a similar case, occurring some years ago, in a man who, while trimming a tree, stupidly sawed off the limb, on which he was placed, between himself and the trunk; he fell twenty feet, struck on the buttocks, and died in six weeks of spinal fracture.

Dr. Freeman related the history of a case of fracture in cervical region from a similar accident (i. e., a fall on the buttocks), resulting in recovery by bony anchylosis, preventing entirely the lateral motion of the head. Hemiplegia was present at first, but finally disappeared. Dr. Freeman presented the uterus and annexa removed from a patient who entered St.

John's Hospital, in October, 1874, suffering from a very fetid uterine discharge. An annular vaginal stricture, half an inch from os tincæ, prevented careful intra-uterine examination; but, after some time, the probable existence of malignant disease was made out. No glandular enlargement existed at any time. Treatment was confined to local disinfection and nourishment.

Having gradually wasted away, she died by asthenia, December 2, 1875.

The specimens removed at autopsy, fourteen hours after death, show: Vagina, stricture near the os, posterior wall infiltrated with malignant deposit; diffuse peritonitis, with abundant exudation all over pelvic viscera; ovaries normal, uterus enlarged and nodular, cavity filled with an extensive growth, evidently malignant; left iliac fossa filled with morbid growth, the whole of the psoas magnus being destroyed, and its sheath filled with the mass; the ilium was found much eroded.

Dr. MATTHEWSON presented an eye destroyed nine years ago by an explosion. Since the last few weeks, sympathetic trouble in the other eye has been set up by overwork. Enucleation was done at once, and the irritation disappeared.

After referring specimens to the Microscopical Committee, the section went into executive session.

Stated Meeting, January 13, 1876.

DR. GIBERSON presented a morbid growth from the lower lip of a man, aged seventy-eight. It was of a year's standing, arising from an abrasion on the lip; it involved the whole of the left side, to the depth of three-fourths of an inch. It was removed without anæsthesia, and slight secondary hæmorrhage from the labial artery was the only unfavorable occurrence.

The same patient has an abrasion on the corresponding side of the nose, where the eye-glasses press; and the question arises, Is this a new focus of growth?

Dr. SEGUR remarked that this was probably the case, and that it was a good opportunity to try prophylaxis by arsenic.

The important point in this method of treatment was, to secure, *from the first*, intestinal toleration for the drug.

Dr. RUSHMORE presented, for Dr. J. C. HUTCHISON, the anterior portion of right half of the tongue removed the same day from a man, aged fifty-five, who bit the tongue three years ago, since which time the member has slowly enlarged on that side, with severe pains, and a fetid discharge from a small ulcerated surface near the tip.

The operation was bloodless, being done by "Nott's rectilinear *écraseur*."

The specimens were referred to the Microscopical Committee, and the section proceeded to elect officers for the ensuing year with the following result:

Secretary, Dr. N. B. Sizer; Treasurer, Dr. C. H. Giberson; Microscopical Committee, Drs. Segur, Mathewson, Sizer; Curator, Dr. T. R. French. After which the section adjourned.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, January 26, 1876.

DR. C. K. BRIDDON, President.

Epithelial Cancer of Buccal Cavity.—The first specimen presented by Dr. POST was one of malignant disease of the floor of the mouth, extending as far forward as the lower jaw, and involving both the bone and skin.

The patient was a man aged fifty, who, upon presenting himself at the Presbyterian Hospital, exhibited an indurated sore upon the mucous membrane of the floor of the mouth. The patient was put upon antisyphilitic treatment, and for a time apparently improved, but eventually the diagnosis of malignant disease was made. Considerable difficulty was experienced by the patient in swallowing, and at times the pain was quite severe. It was decided to remove the diseased mass in order to add to the patient's comfort, if not to prolong his life, and for this purpose Dr. Post carried a vertical incision down from either corner of the mouth, and cut through the jaw in the line of each incision. In this way part of the jaw was removed, also the cancerous mass on the floor of the mouth, and part of the tongue. It was found, after removal, that the disease had passed entirely through the jaw at one point, and involved also the skin of the chin. The patient rallied quite well from the operation, but afterward sank, and within twenty-four hours died of prostration.

Epithelioma of Lower Surface of the Tongue.—This case also was presented by Dr. Post. The patient was a woman aged seventy-three, who presented an epithelial cancer on the lower surface of the tongue. There was but moderate induration around the epithelioma, and no ulceration. Dr. Post removed the tumor by means of the galvano-caustic apparatus of Dr. B. F. Dawson. The operation consisted in dividing the skin of the chin in the median line and cutting through the symphysis of the inferior maxilla. The tongue was then drawn forward and the tumor encircled by a platinum loop and removed. The galvano-caustic was not sufficient to restrain hæmorrhage, and several important vessels had to be ligated. After the removal of the epithelioma, the divided jaw was placed in position and secured by means of wire sutures. The skin was then adjusted by means of ligatures. The patient rallied quickly from the operation and did well.

Enlarged Prostate.—A man, aged seventy-three, entered the Presbyterian Hospital, suffering from cystitis. The patient complained of too frequent micturition, but of no special pain. An examination of the case showed that the prostate was enlarged. After the patient had endeavored to empty his bladder, the catheter was with difficulty introduced and twenty-four ounces of urine withdrawn. Previous to the introduction of the catheter, the patient endeavored to pass his water every hour, but afterward was able to retain it for several hours.

The condition of the patient on entering the hospital was very feeble, and after admission he developed a secondary pneumonia which proved fatal. An interesting condition of the testis was also discovered. There had been a sarcocele, and the tunica vaginalis surrounding it had undergone calcareous degeneration. On examining the diseased testis by the hand, a sense of crackling was discoverable, similar to that felt when an egg-shell is pressed by the finger.

Disease of the Bladder resembling Stone.—A man, aged fifty, came under the observation of Dr. Post, upon whom the diagnosis of stone in the bladder had been made. When the patient was examined with a steel sound, a sensation of roughness was communicated to the instrument, but no click could be discovered. A lithotrite was then introduced and a small calcareous fragment removed. It was then decided to introduce the hand into the rectum, and, although it was carried up as far as the wrist, no satisfactory aid to the diagnosis was obtained. Under the supposition that the case was one of encysted calculus, cystotomy was performed by means of the bilateral operation, but the mass could not be secured by the forceps. The finger could not be introduced to make an examination, from the depth of the perinæum. For a week after the operation the patient did well and was very much relieved, but eventually sank and died.

At the autopsy it was found that there was malignant disease of the bladder. The surface of the cancerous mass was covered over with calcareous matter, and in this way the difficulty of making a diagnosis was accounted for.

Exsection of Knee to rectify Deformity.—A patient, aged fifty, entered the service of Dr. Post, at the Presbyterian Hospital, with anchylosis of the knee, the result of synovitis. The limb was bent at right angles, and any attempt at flexion was not accompanied by pain, proving that, in all probability, the anchylosis was of the true or bony form.

In order to rectify the deformity, exsection of the joint was practised in the ordinary manner, and a wedge-shaped piece of bone removed. It was found, however, that this first section of bone was not sufficient to allow of the limb being placed in a straight position, and a second portion had to be taken out with the saw. The ends of the bone were then secured together by means of wire sutures, and the skin-flaps brought together. The limb was placed in the proper position in a fracture-box, and the wound healed in great part by the first intention.

The case progressed without a bad symptom, and in a short time a plaster-of-Paris dressing was applied.

It was found at the operation that osseous fusion existed at only one side of the joint, the other side showing the existence of a synovial membrane.

Cancer of the Thyroid.—Dr. R. F. Weir presented a specimen of cancer of the thyroid gland, with the following history: The patient entered Roosevelt Hospital suffering from a tumor of the thyroid, which caused considerable dyspnœa. The patient noticed the tumor two months before admission, and then began to complain of dyspnœa. Four days after entering, there was much suffering from dyspnœa, but an operation was postponed on account of the feeble condition. About two weeks after admission to hospital, a very severe attack of dyspnœa came on, and for its relief the house-surgeon performed laryngotomy, but within two hours the patient died. At the autopsy the mass was found to embrace the trachea like a collar, and pass in front of the œsophagus.

Mammary Cancer.—Dr. Francis Delafield presented a slide showing a section of mammary cancer. The disease began apparently in the epithelial cells of the ducts of the glands, and eventually involved the acini.

Syphilitic Disease of the Brain.—Dr. A. H. Smith presented a brain showing evidences of softening. The history was mainly as follows: A man, aged thirty-four, entered St. Luke's Hospital, September 25, 1875. Two years previously he found that he began to pass an increased amount of water, but no trace of sugar could be detected in it.

Fifteen months before admission he complained of pain in his head, but no special significance was attached to the symptom. The health of the patient, however, began to give way, and shortly before entering hospital he had a convulsion. On admission he was found to pass eighty-six ounces of urine in twenty-four hours, but this diminished to such a degree that by the fifth or sixth day only seventeen ounces were passed in the same time. No albumen or sugar could be detected, but an examination by the microscope showed the presence of casts. The specific gravity varied from 1015 to 1020. Convulsions appeared at times during his stay in hospital, and were attributed to uræmia. The patient eventually died comatose.

Autopsy.—The kidneys were not much changed, beyond a slight diminution of the cortical substance. The brain showed at one portion an attachment of the dura mater, due, in all probability, to the presence of a gummy tumor. During the time the man had been under treatment in hospital, he had apparently been improved by antisyphilitic treatment. The daily amount of urine varied from sixty-four to sixteen ounces.

Dr. Delafield was of opinion that the brain-symptoms were due rather to disease of the kidneys than to disease of the brain.

Suppurative Nephritis.—A patient entered hospital, suffering from what she supposed to be uterine disease. The abdomen was very much retracted. A vaginal examination revealed considerable pain around the uterus. Thirty-six hours after entering she died. At the *post-mortem* examination no sign of disease could be found around the uterus or vagina. The kidneys contained multiple abscesses; ulcerations were found on the surface of the bladder, indicating a chronic attack of cystitis.

Osteo-Sarcoma.—Dr. Thomas H. Burchard presented an interesting case of osteo-sarcoma involving the knee-joint. The case was markedly instructive from the number of errors of diagnosis which were made during its progress. The patient was a German woman, aged twenty-seven. She was in good health till seven years ago, when she injured her knee. Following this, synovitis resulted, which was but slightly improved by treatment. Subsequently a diagnosis of aneurism of the popliteal artery was made. The femoral artery was tied for the cure of this supposed aneurism, but no improvement took place in the existing disease. The patient came under the observation of Dr. Burchard last June, and at that time a painful tumor was found around the lower end of the femur. There was also slight dislocation of the bones at the knee-joint. Amputation of the thigh was suggested, but the consent of the patient was not obtained. She was next seen two months ago, when her condition had changed very decidedly for the worse. The immediate cause of death was sarcomatous disease of the lungs. The specimen presented showed marked enlargement of the femur, but a section of the diseased bone was not made. The glands in the neighborhood of the joint were not markedly involved.

Dr. FINNEL presented the heart and lungs of a child that died forty-eight hours after birth. The cause of death was not made out; the only symptom observable was a whining cry; the foramen ovale was found to be open.

Stated Meeting, February 8, 1876.

DR. C. K. BRIDDON, President.

Laryngitis; Bright's Disease.—Dr. A. JACOBI presented the lungs, trachea, larynx, and tongue, of a patient who died in Bellevue Hospital. The man was twenty-four years of age, and entered the hospital February 4, 1876. The previous history was imperfect, and pointed only to what he called a severe cold lasting for ten days, and occurring seven months ago. Three days before admission, severe dyspnœa came on, which increased in severity up to the time he came into hospital. Physical examination of the chest gave negative results. Laryngotomy was performed, but with only slight benefit. Shortly afterward the patient died. The condition of the patient from the time he entered hospital was exceedingly poor. The pharynx, tongue, and larynx, were markedly hyperæmic. The urine contained albumen.

At the autopsy, the lungs were found to be œdematous, and in some places there were spots of lobular condensation. The spleen was enlarged and lobulated. The kidneys gave evidence of diffused nephritis, with condensation of tissue.

Dr. SEGUIN asked Dr. Jacobi if there was dryness of the fauces and tongue, for he said that Dr. W. H. DRAPER had pointed out to him that in uræmia there was frequently dryness of the mouth.

Dr. Jacobi said that in the case presented the dryness was a marked symptom. The appearance of the tongue was as if the patient had ichthyosis of that organ.

Dr. Beverly Robinson directed attention to the fact that collapse of portions of the lung was frequently taken for the results of the pneumonic process, and the only way to settle the matter was to inflate it. If collapse was present, the force of the air would cause expansion of all of the lung not involved in pneumonia.

Softening of the Spinal Cord.—Dr. W. H. Polk presented a section of the spinal cord removed from a patient dying in Bellevue Hospital. The patient was a man aged seventy-six, who entered hospital January 31, 1876. He had been well till one year ago. At that time he complained of numbness of the extremities, which was followed by paraplegia. The mental faculties were not impaired till two weeks before admission. When the patient was seen in the hospital ward he was not unconscious, but merely stupid.

The condition of the patient did not change very much during his stay in the hospital, but gradually he sank, and died on February 8th.

Post-Mortem Examination.—The lumbar portion of the spinal cord showed central softening. Calcified plates were found on the posterior part of the cord. Dr. Polk was of the opinion that the case was originally one of meningitis, resulting in myelitis and softening.

Cancer of the Stomach.—Dr. Polk also presented a case of cancer of the stomach, which was mainly interesting from the fact that no symptoms of gastric derangement were discoverable during life.

The patient entered hospital four months ago, suffering from Bright's disease. After a residence in hospital of two months, she had so far improved as to be discharged. Two months ago she reëntered, and shortly after became hemiplegic from embolism of the left middle cerebral artery—eventually she died.

Autopsy.—On the lesser curvature of the stomach a scirrhous mass was detected, which only slightly involved the pylorus. For this reason, in all probability, the absence of gastric symptoms could be accounted for. The brain was found softened, the result of the plugging of the middle cerebral artery. The kidneys were found contracted. There was also ossification of the coronary arteries, but no symptom of angina pectoris was discoverable during life.

Pericarditis, Pleuritis, and Myocarditis.—Dr. BURCHARD presented the heart of a patient who had suffered from myocarditis, pleurisy, and pericarditis. The main interest of the case rested on the diagnosis of the myocarditis made by Dr. Loomis. The patient was twenty-five years of age, and for the past ten or fifteen years had been addicted to stimulants. His sickness began with an attack of double pneumonia, which resolved on the tenth day. On the evening of that day there was an increase of temperature, and on examination double pleurisy and pericarditis were discoverable. Dr. Loomis saw the case in consultation and confirmed the diagnosis, but was of opinion that there was in addition myocarditis. A syphilitic eruption appeared during the progress of the case.

At the autopsy evidences of pleuritis, pneumonia, and pericarditis, were present. The heart was enlarged, and the muscular tissue supplanted by a cellular growth. The kidneys had undergone waxy degeneration. During the progress of the case digitalis had been administered, but without any good effect. Dr. Loomis was of the opinion that myocarditis was a more common disease than was usually supposed. The most reliable diagnostic symptoms were feeble impulse of the heart, with a rapid and compressible pulse.

Diphtheria.—Dr. J. LEWIS SMITH presented the tongue, larynx, trachea, and bronchi, of a child. The main interest of the case rested on the fact that there was a possibility that, if the operation of tracheotomy had been performed, the patient might have recovered.

Dr. Smith recited, in connection with the case presented, two other cases. The history was briefly as follows: He was called to attend a case of diphtheria on January 29th. The patient was four years of age, and had been sick two days. There was a good deal of pharyngitis, but no marked dyspnœa. The child died next day. A few days afterward two children, aged respectively six and three years, living on the opposite side of the street, were also attacked with the disease. All of these children were playmates. The child three years of age had a mild form of the disease and recovered, but the child aged six years died, and furnished the specimen presented by Dr. Smith. The *post-mortem* examination was made at the request of the father of the children.

The lungs were not collapsed. The air-passages were examined by Dr. Satterthwaite, who reported that diphtheritic membrane extended below the bifurcation of the trachea. At the larynx, the membrane was of a cheesy consistence, but farther down it was of greater consistency, and of lighter color. The tonsils showed depressions covered with white patches. The upper lobe gave evidences of croupous pneumonia.

Dr. Smith said he regretted that he had not advised tracheotomy, as the condition of the child was very good.

Pachymeningitis, with Extravasation of Blood.—Dr. Seguin presented two preserved specimens showing a section of clot which was discovered on the brain. It was one-third of an inch in thickness, and inclosed in a membrane. Dr. Seguin said that it was the result of pachymeningitis.

Dr. Seguin had examined also the specimen of dura mater presented at the last meeting by Dr. A. H. Smith. It exhibited under the microscope the characteristics of a gummy tumor.

Amputation of the Cervix Uteri.—Dr. Sell presented an amputated cervix uteri which he had removed from a patient aged thirty-nine, who had suffered from elongation of the cervix, with procidentia. The operation was performed by means of Dr. Dawson's galvano-caustic apparatus.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 20, 1876.

Dr. S. S. Purple, President.

Uterine Hæmorrhage.—Dr. H. T. Hanks read an extensive paper on metrorrhagia and menorrhagia, and gave a summary of the cases which had come under his observation in the department of diseases of women, at the Demilt Dispensary, during the past year.

Dr. Fordyce Barker, at the request of the President, opened the discussion:

He said that Dr. Hanks had covered nearly the whole of the subject with his article. There were one or two points, however, that he would wish to refer to. Hæmorrhage from the uterus was often caused by an ovaritis, and it was also of not unfrequent occurrence in patients suffering from malaria. Heart-disease, too, had a tendency to uterine engorgement and metrorrhagia, as well as to the congestion of other viscera. Toxic influences, such as scarlatina and measles, were an important element in causing a discharge of blood from the uterus.

Dr. Barker recited briefly a case of this class which had come under his observation: A little girl, the daughter of a physician, during an attack of measles, was seized with such a profuse uterine hæmorrhage as to cause as marked collapse as occurred in *post-partum* hæmorrhage. The ostium vaginæ was quite patulous, and the cervix of the uterus was so dilated as to allow of the introduction of a tampon to check the flow. Eventually the patient recovered.

In regard to the uterine disturbance that is frequently noticed at the change of life, Dr. Barker said that many of this class of cases came under his observation. The most common symptoms observable are an increased flow of blood, together with a slightly enlarged uterus. The patients were liable to be very much alarmed, and in dread of some possible danger. The treatment that was suggested was the use of rectal suppositories, one of them to be introduced three times a day. They were to be employed about a week before the epoch and continued till menstruation appeared. The formula of the suppositories was as follows:

Ext. ergotæ aq., ʒ ij.
Ol. theobromæ, ʒ j.
Ft. suppos. no. xij.

The suppositories of ergot were preferred to hypodermic injections, from the unpleasant sequelæ of abscesses which were found occasionally to happen with the latter.

If the bleeding from the uterus continues, cones containing iodoform were introduced within the cavity of the uterus, and, in the experience of Dr. Barker, were of great benefit. The composition of these cones was:

Iodoform, ʒ ijss.
Gum-arabic, gr. xv.
Mucilage sufficient to make ten cones.

Dr. E. R. Peaslee said, while the paper of Dr. Hanks was excellent and extensive, there were some points which he would wish to criticise. He did not think it possible that an endometritis could cause retroversion, for the reason that the lining membrane of the uterus was only from one twenty-fifth to an eighth of an inch in thickness, and any congestion of that membrane could be of little weight. When there was a congestion of the lining membrane there might very likely be a congestion of the uterus, and, if so, retroversion might then result.

In regard to the metrorrhagia due to cancer, Dr. Peaslee was in the habit of removing, by means of the sharp *curette*, all of the superficial fungous mass. This fungous mass was the source of the hæmorrhage. When the hard scirrhous tissue was laid bare, hæmorrhage ceased, and recommenced when the exuberant granulations again developed. The operation should be repeated, as a rule, once in two weeks.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, January 24, 1876.

Dr. T. Addis Emmet, Vice-President, in the Chair.

Gleet and its Relation to the Stricture of the Urethra.—Dr. H. B. Sands, President of the Society, read a paper on the above subject, and in the course of his remarks criticised the opinion of his colleague, Dr. F. N. Otis.

Dr. Otis replied at some length, and presented patients, and records of observations verified by competent medical men.

Dr. Sands's paper will be found *in extenso* in this issue of the Journal.

Bibliographical and Literary Notes.

Art. I.—*Experimental Investigation of the Action of Medicines.* By T. Lauder Brunton, M. D., etc. 8vo, pp. 90. London: J. & A. Churchill, 1875.

Dr. Brunton is already very well known to the profession as the accomplished editor of the *Practitioner*, to which place he succeeded on the death of the lamented Anstie.

Dr. Brunton has given us in his journal, and in other places, some very interesting and instructive articles on the action of medicines, and on some of the more complicated physiological problems. In these pages, which are reprinted from the *British Medical Journal*, he has given us a very clear and careful statement of the requisites for experimentation, and the methods of investigation into the action of medicines.

Now that the experimental investigation of the action of medicines has assumed so important a part in the advance of medical science, some such text-book for investigators is very necessary. This is particularly true in this country, where experimentation is still in its infancy.

Dr. Brunton will certainly not lead any one to rashly undertake this branch with the mistaken idea that fame is to be lightly won. Probably no class of investigations requires more varied prerequisites on the part of the investigator, and more careful and discriminating observation.

This is only the first part of what we hope will swell into a good-sized volume. It is confined entirely to the circulation. The directions are clear, and the plates of apparatus excellent. We commend the book not only to those interested in experimentation, but to those skeptics who refuse to see any good in this sort of work. A knowledge of the very careful manner in which the experiments are made, and the sources of error avoided, must induce respect for the results obtained.

ART. II.—*Inhalation in the Treatment of Disease: its Therapeutics and Practice. A Treatise on the Inhalation of Gases, Vapors, Fumes, Compressed and Rarefied Air, Nebulized Fluids, and Powders.* By J. SOLIS COHEN, M. D., Lecturer on Laryngoscopy and Diseases of the Throat and Chest, in the Jefferson Medical College, etc. Second edition, revised and enlarged, with many new Illustrations. Philadelphia: Lindsay & Blakiston, 1876.

DR. COHEN's useful handbook on the treatment of disease by inhalation has been for some time out of print. We are glad to see that the new edition contains some important additions, so that the work now includes all that has been proved by experience to be of value in regard to this method of administering remedies. More attention is devoted to the therapeutic uses of compressed and rarefied air, according to recent experiments abroad. The work has the merit of containing much information that cannot be obtained elsewhere without tedious search among the writings of foreign authors.

ART. III.—*The Body and its Ailments: A Handbook of Familiar Directions for Care and Medical Aid in the more usual Complaints and Injuries of Adults and Children. To which is added a Family Health-Record.* Edited from the works of Drs. SOUTH, TURNER, and others, with an Introduction by GEORGE H. NAPHEYS, A. M., M. D. Illustrated by over One Hundred Engravings and Colored Plates. Philadelphia: H. C. Watts & Co., 1876.

As a popular work on medicine, intended solely for the non-professional reader, that of Dr. Napheys strikes us rather favorably. It is a question whether such works really do much good, but the public will read something of the kind, and it is certainly important that the information given should be accurate and the advice judicious. This work is all that it pretends to be, and to many it will have a special claim to favor from the omission of the chapters on sexual disorders which so often render popular works of the kind objectionable for use in the family. The frontispiece is an elaborate colored diagram of the principal organs of the body; and the other illustrations, though rather coarsely executed, answer the purpose for which they were intended. The press-work is not as good as it might be.

ART. IV.—*Medical Diagnosis, with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases.* By J. M. DA COSTA, M. D., Professor of Practice of Medicine, and of Clinical Medicine, at the Jefferson Medical College, Physician to the Pennsylvania Hospital, etc., etc. Illustrated with Engravings on Wood. Fourth edition, revised. Philadelphia: J. B. Lippincott & Co., 1876.

DR. DA COSTA's admirable treatise on medical diagnosis has been so long a standard work in all our schools, and is so favorably known, both in this country and abroad, that we are not surprised at the demand for a fourth edition. It is gratifying to note, in a rapid perusal of the new volume, that the author has bestowed no small care on the work of revision. Many additions and changes have been made throughout the volume, and especially in the chapters on "Nervous Diseases" and on "Fevers." We cannot too highly recommend the work to every earnest student of medicine as one of sterling value, and a safe guide through many of the intricacies of physical diagnosis.

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Twentieth Annual Report of the Trustees of the State Lunatic Asylum at Northampton, Mass. October, 1875.

Medical Thermometry and Human Temperature. By E. Seguin, M. D. New York: William Wood & Co., 1876.

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Valedictory Address of Clark Bell, Esq., on retiring from the Presidency of the Medico-Legal Society of New York, November, 1875, with Appeal for Library, and Statement of Library Contributions.

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Report of the Board of Directors and Physicians and Superintendent of the Western Lunatic Asylum of Virginia, for the Fiscal Year 1874–'75.

The Treatment of Syphilis, with Remarks on the Degree of Inheritance. By Joseph W. Thompson, M. D., of Paducah, Ky. Reprinted from the *Richmond and Louisville Medical Journal.*

The Medical Jurisprudence of Insanity. By J. H. Balfour Brown, Esq. Second edition, with References to the Scotch and American Decisions. Philadelphia: Lindsay & Blakiston, 1876.

Veratrum as an Antidote to Opium. By J. S. Todd, M. D. Read before the Atlanta (Ga.) Academy of Medicine.

Subacute Cystitis following Parturition. By W. L. Richardson, M. D., Visiting Physician to the Boston Lying-in-Hospital. Reprinted from the *Boston Medical and Surgical Journal*, February 3, 1876.

On the Extirpation of Enlarged Lymphatic Glands. By Rushton Parker, M. B., B. S. (London), F. R. S. Reprinted from the "Liverpool and Manchester Medical and Surgical Reports," 1873.

A Criticism of Esmarch's Elastic Compression. Founded upon an Experience chiefly of Amputations. By Rushton Parker, F. R. C. S., Surgeon to the Stanley Hospital, Pathologist to the Royal Infirmary, etc. Reprinted from the "Liverpool and Manchester Medical and Surgical Reports," 1875.

Transactions of the American Ophthalmological Society. Eleventh Annual Meeting, Newport, R. I., July, 1875. New York: William Wood & Co.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. SAMUEL B. WARD, GEORGE R. CUTTER, EDWARD FRANKEL, W. T. BULL, AND E. H. BRADFORD.

SURGERY.

The Antiseptic System in Surgery.—Dr. George Thompson, Surgeon to Oldham Infirmary, writes a communication on this subject to the *Medical Times and Gazette*, which appears in the issue of that journal of November 6, 1875. The fact, he says, that nearly ten years have elapsed since attention was first directed by Prof. Lister to the alleged advantages of the system, while its place in surgical practice is yet far from being settled, makes it desirable, in the absence of statistics of results, for comparison with those of other systems, to make some attempt at collecting what evidence is before the profession, with a view of arriving at some sort of a decision. An absolute belief in the omnipresence and omnipotence of germs in the air, on which the processes of fermentation and putrefaction depend, has been until recently insisted on by Lister as indispensable to success.

All the numerous devices and appliances in use among antiseptic surgeons have two ends in view: 1. The entire exclusion of all these septic germs from wounded surfaces; and, 2. The destruction of all germs that may have already gained admission. In order to attain the first of these objects, every operation is performed in a cloud of spray containing carbolic acid, and the wound is afterward constantly enveloped with some substance impregnated with the same or some other antiseptic. For a full description of all the details, see Prof. Lister's papers in the *Lancet* of March and April, 1875. The second object is said to be effected by the application of a tolerably strong solution of an antiseptic, such as carbolic acid, or chloride of zinc, to the tissues that have been injured or exposed. When proper precautions are taken, it is claimed by Prof. Lister that not only is constitutional disturbance after severe injuries very much diminished, but putrefaction may be entirely prevented, and, as a consequence, suppuration very much diminished, and all the complications most dreaded by surgeons, such as erysipelas and pyæmia, entirely got rid of and set at defiance.

The writer next combats the theory on which the whole practice is founded, admitting only that it is a bare possibility. The germs, if they exist at all in the air, cannot be detected by any of our present means of observation, while such experimental evidence as is brought forward goes quite as far to support the physico-chemical theory as that which it was intended to prove. On the other hand, those low organisms of a palpable kind, which are supposed to depend for their existence on the development of these atmospheric germs, and to be the essential accompaniments of putrefactive changes, are now pretty generally admitted to be found within the body in such situations as to preclude the possibility of any immediate contamination from without, and may even be introduced into the circulation without apparent injury. Again, many surgeons of great repute claim to have obtained excellent results by freely exposing wounded surfaces to the air, and treating them without any dressing at all. Such a result could scarcely be accounted for, it is asserted, if atmospheric germs were as omnipresent and as injurious as they are claimed to be.

Conceding a surrounding atmosphere teeming with dangerous germs, the efficacy of the methods adopted for destroying and excluding them may be questioned. It has been proved by Dr. Dougall, of Glasgow, that in a solution of carbolic acid, such as is used for germ-killing purposes by antiseptic surgeons, bacteria—Lister's type of injurious germs—not only are not killed, but that they actually flourish and rapidly reproduce therein. Vaccine lymph, which may be regarded as fairly analogous to the specific poison of erysipelas or pyæmia, so far from being rendered inert by exposure to an atmosphere made antiseptic by carbolic acid, retains its vitality longer than when exposed to ordinary air. These facts Dr. Thompson says he has frequently verified by experiment, and it might well be argued that pyæmia or erysipelas, once introduced into the antiseptic atmosphere, would linger there longer than it could do under ordinary conditions.

Coming now to the practical results of the antiseptic system, it is stated that the published reports of strikingly successful cases may be matched, case for case, by equally striking results where no antiseptic measures have been used. That cases do very well under the antiseptic system, no one who has visited Prof. Lister's wards will be disposed to deny, however much the alleged cause of the success may be questioned; while we may well doubt whether such evils as erysipelas and pyæmia are got rid of, so far as external causes go, the important fact remains that pyæmia, for example, occurs in cases where no abrasion of the surface of the body has taken place. It is impossible to resist the conviction expressed by Mr. Wood, that there must be, at least in a proportion of cases, agencies of an occult kind operating on the general system, and that, if these agencies are atmospheric in their origin, they gain admission by other channels besides the wounded surface. Rumor says that even in the wards of Prof. Lister the boasted immunity from pyæmia has been attained, partly at least, by a departure from the usual interpretation of diagnostic signs. There is but one way in which a satisfactory conclusion can be arrived at concerning the worth or worthlessness of the system; and that is, by comparing the results of a large number of serious injuries and operations, treated according to its rules, with the results of a similar number of like injuries and operations treated by other methods.

Dr. Thompson's personal experience with the system is limited to a careful trial extending over six months, and carried out in every detail, in Oldham Infirmary. At the end of that period, finding the time necessarily spent in the daily dressing an intolerable tax, while his results showed no marked improvement, he was constrained to modify it. The good results attained by Prof. Lister he is inclined to attribute to the careful attention bestowed upon such details as cleanliness, compression, suspension, temperature, and, above all, free drainage. The application, to tissues whose vitality has been destroyed, of some such antiseptic as carbolic acid he also considers of great importance, because, in the first place, they then do not undergo decomposition during the process by which they are thrown off; and also because carbolic acid is a stimulant, and perhaps somewhat of an anæsthetic besides. The communication concludes: "I cannot think that scientific surgeons will ever adopt what, as hinted by Prof. Spence, in his recent address, recalls the spells and incantations in use by surgeons of a less enlightened age, before it was discovered that wounds could be healed without having a fuss made over them." S. B. W.

The Etiology of Hereditary Syphilis.—This subject has been treated by Dr. Adam Owre, of Christiania, on three previous occasions: in 1868, "Considerations on the Origin of Hereditary Syphilis;" in 1872, "By whom is Hereditary Syphilis transmitted?" and in 1873, "New Facts for resolving the Question, by whom is Hereditary Syphilis transmitted?"

In 1868, after having examined the cases directly connected with the matter, in the archives of the hospital of the university, as well as in his private practice, he formulated a conclusion conformable to that of H. Mireur, in his "Essai sur l'Hérédité de la Syphilis" (Paris, 1867): "We consider the paternal influence as extremely rare, as exceptional."

He felt disposed to give, with Cullerier, an entirely exclusive answer to the previously-cited question, *by the mother alone;* but did not dare to, because of a single case which seemed to him doubtful and too obscure. The number of fathers (private patients) was twelve, that of the children was nineteen.

In the work of 1872, to be more exact and certain, his observations were drawn exclusively from investigations among his private patients. Thus, he commenced by treating the father for syphilis, and continued to observe him constantly during his life, and as the father of a family, and no case has presented itself where the father produced children specifically infected. There were, at that time, twenty-four fathers of this category, with forty-two children.

The treatise of 1873, drawn from the same materials, gives exactly the same result: *no infected children.* The number of fathers had risen to twenty-nine, that of the children to fifty-five.

In opposition to the divergent opinions of the various authors, we here find a positive reconciliation with the doctrine of Cullerier; the author thinks that, to arrive at the truth, it is necessary to work over a limited and private field, where it may be possible to investigate and authentically follow all the circumstances. In a more public and developed field, as, for example, in the poli-cliniques and the ambulatory cliniques, one is much more liable to receive erroneous and false communications. The experience of private practice alone permits us to draw exact conclusions.

It is so much the more necessary to know thoroughly the condition of health of both parents, because an absent and innocent father is liable to be burdened with the fault of the mother.

The author calls attention to the fact that there is here only a question of fathers who present no local phenomena, and consequently only of the possibility of the infection of the fœtus by the semen, and not of the transmission of the disease as such to the mother; for in this case the nature of the inquiry is changed.

The present treatise of 1875, composed like the others from private material, continues to present the same result: no symptom whatever of infection in the children. The number of fathers has risen to forty-two, that of the children to eighty-nine.

Of this number of children, three are dead; one of rachitis, the second of hydrocephalus, the third of pleuro-pneumonia. Five of the children have been lost sight of, three having emigrated, and the two others having changed their place of residence.

The mothers are all quite well, without having ever presented the least symptom of infection. The result of these observations is, therefore, in 1875, the same as before:

1. The father, suffering from a latent constitutional syphilis, has no direct part in the development of hereditary syphilis.
2. The child of such a father is healthy and well.
3. Hereditary syphilis always supposes an infected mother.
4. The semen of a syphilitic man does not exert any influence on the organism of the mother, either directly or indirectly (by pregnancy).—*Nordiskt Med. Arkiv*, vol. vii., fasin 3. G. R. C.

Diffuse Spontaneous Osteo-Myelitis.—Dr. Hjort, of Christiania, reviews the theories which have been presented of the disease in question, and finds them all unsatisfactory. He gives the history of a case, observed and treated by him at his clinic, of acute diffuse osteo-myelitis ot the right humerus of a boy, sixteen years of age, followed by purulent synovitis of the knee and shoulder joints, and in which he trephined the humerus. Death occurred seventeen days after the appearance of the inflammation. At the autopsy he found fatty embola in the lungs, and the capillary vessels of the lungs and kidneys partly plugged by masses of micrococcus. At the same time, a man sixty years of age died in another hospital from a purulent, malignant periosteitis of the femur, angioleucitis and infecting fever. Before coming to the hospital both patients had slept together in the same bed and under the most unfavorable hygienic conditions. A contusion had preceded the disease in both cases, and the disease commenced ten days later in the boy.

Another patient occupying the bed adjoining that of the boy, at the hospital, was convalescing from a phlegmon of the thigh. Although the incisions had not completely cicatrized, the antiseptic dressings were removed. This patient was attacked by ambulant erysipelas the same day that the other died. There was subsequent poly-articular synovitis, but the patient recovered, notwithstanding the grave concomitant fever. The author regards these morbid processes as identical, and, recognizes as a cause the invasion of infected micrococci, which in the former had penetrated by an excoriation above the epitrochlea, and from this had been transported to the still open wounds of the other. He believes that we may regard the first case as an erysipelas of the bone, and founds this opinion—1. On the indubitable connection of the two cases. 2. On the concordance of the symptoms, the character of the fever, the poly-articular synovitis. 3. On the identity of the microscopic phenomena of diffuse osteo-myelitis and erysipelas. Hjort recalls the etiological identity admitted between erysipelas and puerperal fever (*erysip. grave internum*, Virchow), as well as purulent periostitis of the phalanges (*panaritium periostale*), which the English call erysipelas of the fingers. It is admittable that these morbid processes are not specifically different, but that an importation of infected micrococci causes to arise, according to the way by which they make the invasion and the road which they find open, in certain cases a malignant osteo-myelitis, in others an ambulant internal erysipelas, a parametritis, a diffuse peritonitis, an ulcerative endocarditis, etc. Early incisions are advised, and, when the temperature remains constantly elevated, trephining into the medullary canal, the present case having shown that the medulla was fluid and compressed, which favored the fever of absorption. The disarticulation is not advised, but is considered a useless mutilation.—*Nord. Med. Ark.*, vol. vii., fas. 3. G. R. C.

Treatment of Diffuse Phlegmonous Periostitis, by GIRALDÈS (*Gaz. hebd.*).—Extensive incisions through the soft tissues down to the bone only cause the disappearance of the severest symptoms, while the anatomical lesions, whose course is tedious and may become dangerous, remain; the bone, deprived of its periosteum, exfoliates and gives rise to suppuration, granulations, etc. It is then requisite to counteract the effects of suppuration by drainage and injections, but the process remains tedious and dangerous until the sequestrum is removed. The author, therefore, resects the portion of bone deprived of its periosteum immediately after the incision, or at least a short time after it, whenever the formation of a sequestrum is feared, and has had numerous satisfactory results. He recommends delay only in the case of the femur and upper portion of the humerus. If the disease shows a tendency to extend to the epiphyseal cartilages, or to the joint, partial or total resection, according to the extent of the affection, is recommended. E. F.

Hypertrophy of the Mammary Gland.—A rare case of this condition, occurring in a girl sixteen years of age, under Prof. Richet's care, is recorded in *La France Médicale*, 38 and 39, 1875. She first menstruated when fourteen years old, and since then both breasts had begun to increase in size. The right one especially had grown enormously. In a short time the growth assumed such dimensions that it had to be carried in a sling, and medical advice was sought. Tincture of iodine was given internally, thirty drops daily for three months, but produced no marked effect. The right breast was not much diminished in size, though it became longer. Before the administration of the iodine it measured fifty centimetres around the base and thirty centimetres from the nipple to the margin of the sternum; after its administration, forty centimetres at the base and forty-six centimetres in length. The right breast had lost its fat, was movable under the skin, felt less dense, and the several glandular masses could be well distinguished. The patient's whole body was emaciated, though in the main she enjoyed good health, menstruating regularly, but complained of an unpleasant feeling in the shoulder and arms, which became more unbearable from day to day, and prevented all occupation. This induced her to submit to an operation. Richet chose the galvano-cautery, and with it extirpated the gland, May 9, 1875. The knife did not remain hot during the entire cut, and the operation had to be completed with the bistoury. The loss of blood was slight. The removed breast weighed about 2,000 grammes. The wound healed well, but since then, as was anticipated, the left breast has increased so enormously in size that its removal is likewise called for.—*Med. Chir. Centrbl.* E. F.

On the Methods of Artificial Fracture of Bone, and their Application in Orthopedic Surgery.—In Langenbeck's *Archiv* (Bd. 18), C. Gussenbaur has an interesting monograph on this branch of surgery. Up to the time of Rhea Barton, who added bony anchylosis in unfavorable position as a new indication for artificial separation, refracture was the rule only after crooked union. Rhea Barton was the first who sawed through the bone to straighten it; Von Langenbeck subsequently reported his method of subcutaneous osteotomy, which consisted in sawing through the greater portion of the thickness of the bone from a hole made by a drill, and then causing fracture. Brainard, on the other hand, weakened the bone before fracturing it by drilling through it in several places. Gross improved his method by using the chisel, and Billroth first applied chiseling through in the continuity of the long bones as a preliminary step to fracture. The author divides the methods into these—1. Without wound of skin; 2. Those complicated with injury of the skin. Refracture without wound of skin may be accomplished either by overcoming the relative osseous solidity (breakage), or absolute osseous solidity (laceration). If manual force does not suffice for the former, the osteoclast of Rizzoli, on the principle of the two-armed lever, is useful, especially for the separation of anchylosis and fracture of normal bones; in the latter case an oblique fracture was always obtained, and the desired object of an overriding of the fragments, as, for instance, in a case of shortening of one lower extremity, to be compensated by a like shortening of the healthy extremity. The absolute osseous solidity is overcome in practice by extension and counter-extension, either by means of manual force or extension apparatus; as in this procedure the solution of continuity takes place at the least solid portion of the bone, the extension method is best adapted to fractures which have caused deformity and much shortening, as long as the callus has not become too solid.

When the above methods do not accomplish the desired result, others, associated with injury to the skin, must be resorted to. Of these are to be mentioned: Removal of a wedge-shaped piece with the saw, with which A. Mayer obtained very satisfactory results; subcutaneous osteotomy according to Von Langenbeck, who perforated the bone from a small wound in the skin, and, after having drilled the bone, sawed through it with a narrow saw, after which the fracture was accomplished without difficulty; then, Brainard's method, by perforation by means of an instrument which could be used both as chisel and drill; and, lastly, partial chiseling through of the bone before fracture, which deserves the name of subcutaneous osteotomy before all others, as by it the bone is divided without any loss of substance, and healing can take place without suppuration, just as after a simple fracture. The cortical substance of the bone should be chiseled through only to such an extent as will allow of the completion of the fracture (or infraction) by manual force, and it should always be done on the side opposite to that from which the force is to be exerted, so that after the fracture the incision made by the chisel will gape. The author thinks that the fracture should not be made until the skin-wound has healed, though in his experience at Billroth's clinic the danger of suppurative osteitis is slight, even if the fracture is made immediately after the chiseling.

The author's experience is derived from the cases observed in Billroth's clinic. Three cases of badly-healed fractures, two of the thigh and one of the leg, in which the deformity, and likewise the derangement of function, was very great, came under treatment. In one case the callus was fractured by extension apparatus; one case by means of Rizzoli's osteoclast, and one case by manual force. In a case of rachitic distortion of the thighs and legs, straightening of one leg was accomplished without solving its continuity, while the leg of the other side was infracted. Cure, with complete removal of deformity. In two cases of rachitic distortion both legs were broken by manual force, and straightened, followed by complete cure. In six cases of rachitic bending of both legs, straightening was possible only after the tibia had been partially chiseled through, owing to the great solidity of the bone; in four cases the operation was performed in both legs at the same time; as in the first two cases, the safety of the operation, performed in intervals of several weeks, was assured. Fixation of the fragments was effected by means of plaster bandages.

After the fractures had healed, the walk was usually very uncertain, partly on account of the laxity of the ligaments, especially of the knee, partly owing to atrophy of the muscles from inactivity. The patients were, therefore, at first supplied with supporting apparatus. In all cases the final result as regards form and function was very good. In every case the limb was straightened immediately after osteotomy, but in two cases the position had to be improved. The author observes that straightening of the leg usually succeeds without solving the continuity of the fibula with the tibia, as the lateral motion in the upper joint of the fibula usually allows a complete *redressement*. All the above osteotomies occurred in children.

In four cases of angular position of the knee-joints in individuals from sixteen to twenty-two years old, the result after osteotomy was equally good. One case was genu varum, two cases genu valgum on one side, one case genu valgum on both sides. In every case the deformity was remedied by chiseling through the tibia about one inch below the spine. The general and local reaction was slight.

In anchyloses in the hip-joint the author favors subtrochanteric osteotomy, as opposed to division of the neck; this, on account of the great depth of the wound of the soft parts, and the difficult after-treatment in the latter operation. In a case of bony anchylosis of the left hip and knee-joint, in unfavorable position, in a man of twenty-one years, osteotomy was made through the neck of the femur; extensive inflammation with long-continued suppuration followed, and the patient died from exhaustion four months after the operation; the autopsy revealed a high degree of amyloid degeneration of the kidneys, spleen, and liver.

The author mentions one other case of subcutaneous osteotomy of the tibia in a girl of thirteen months, on account of an angular position probably caused by intra-uterine fracture. The limb could not be straightened after fracture of the tibia, because the angular position had been fixed by firm ligamentous bands and by the shortness of the muscles. The considerable contusion of the soft parts determined much sloughing of the soft tissue, and necrosis of the fractured ends. The patient was removed from further observation with a well-granulating wound.

In conclusion, the author expresses the conviction that artificial separation of bone, especially subcutaneous osteotomy, is destined to become one of the "most justifiable and useful operations" in orthopedics.—*Med. Chir. Centrbl.* E. F.

On Rupture of the Ligamentum Patellæ.—In connection with the report of three new cases of this injury, Dr. Blacher (*Gaz. des Hôp.*) adds the following remarks: After an examination of thirty-one other cases reported in French literature, he inclines to the opinion that a severe contraction of the quadriceps extensor, to prevent the body from falling backward, constitutes the essential cause of the rupture, even though the leg is found in a position of strongest flexion with the knee under the glutæi, and when presumably the ligament tears from excessive stretching. A naturally weak ligament may rupture even upon less violent muscular action during running and walking. The rupture may be complete or incomplete; when it is complete the ligament is most often torn off from the tuberosity of the tibia, less often from the angle of the patella. The rupture least often occurs in the middle. When the tuberosity is torn off with it, crepitation may be elicited after reposition of the fragments. Rupture through the middle of the ligament may be considered more favorable; that is to say, in this case recovery has taken place more rapidly: two cures in two months and one in three months. The case of Norris, in which recovery is said to have taken place in sixteen days, the author considers doubtful. The injury is often complicated with acute dropsy of the joint, and complete absorption often takes a long time. In one of the author's cases there was still slight swelling one year after the injury. Inflammation of the knee-joint less often occurs. The definite results of the thirty-one cases, so far as they have become known, were: in ten cases, complete recovery in from six months to one year; in two cases anchylosis and chronic arthritis. Dr. Blacher recommends as treatment, rest and fixation of the limb in a well-padded splint on an inclined plane, with extension of the leg and flexion of the thigh, so as to approximate the head of the tibia toward the patella, and cold compresses to the knee-joint as long as there are inflammatory manifestations. After fourteen days the attempt may be made to draw the patella downward by proper bandaging (figure-of-8); if there is exudation, it is advisable also to make pressure from before backward. The whole extremity is put into an immovable dressing, in which it remains extended for about three weeks. The lengthening of the ligament, which usually remains after the removal of the dressing, gradually disappears, as also the stiffness after the employment of passive motion and massage. In attempting to walk the patient should be provided with a proper knee-cap. Passive motion should not be commenced before the twentieth day, for fear of anchylosis, as has been recommended, as it may prevent solid union between the separated ends. In one case in which union did not take place, Guérin successfully performed subcutaneous freshening two months after the injury. If union fails to take place, prothetic apparatuses must be adapted to the joint.

Spontaneous Cure of Extensive Telangiectasiæ. — Dr. Hansen, of Hadersleben, had observed on several occasions that telangiectasiæ healed spontaneously; thus children brought to him for vaccination presented small, yellowish spots, the places of which, according to the mother's statements, had previously been occupied by red spots; these red spots for a time had grown rapidly, and then again rapidly disappeared. The author remembered the case of a new-born infant on whose arm was situated a telangiectasia about a dollar in size. At the end of the first year it disappeared, leaving a yellow, wrinkled spot. The following interesting case is also communicated: According to the statement of the child's mother, small spots, like flea-bites, appeared shortly after birth on the face and neck of the child, which gradually increased in size. When seen by the author, there was a somewhat elevated nævus, larger than a dollar in size, just in front of the left external ear, which rested on a more deeply-situated erectile tumor. On the right side of the face there was another larger nævus; behind the right ear was found a telangiectasia of the size of a ten-groschen piece, and on the chin another about half the latter in size. Another was situated on the lower lip, which extended into the mouth to the palatine arch. Many larger and smaller nævi were situated on the lower part of the face and on the neck. The author decided to extirpate the one in front of the left external ear which rested on an angioma. Although the operation was accompanied with considerable loss of blood, the condition of the patient after the operation remained satisfactory. A few weeks afterward the tumor on the right side of the face was likewise extirpated. In the mean time the remaining tumors had increased enormously in size, whereupon a few others were also removed. Shortly after the last operation the child became attacked with a severe bronchial catarrh and came near dying from debility. Two years subsequently the child was presented for vaccination. It then enjoyed full health, all humors had disappeared, and all that remained was a few wrinkled spots of a light-yellow color. The disappearance of the nævi had commenced six months after the operations.—(*Mittheil. f. d. Ver. Schleswig-Holstein Aerzte ; Schmidt's Jahrbüch.*, No. 10, 1875.) E. F.

Muscular Hernia.—Dr. Edward Honigschmied (*Med. Chir. Centralblatt*, No. 42, 1875) reports a case of this rare accident. A mason, aged forty-eight years, of small but muscular build, in attempting to lift a heavy stone with both hands, suddenly experienced a crepitation in his left arm while raising it inward, upward, and backward, which caused him to let the stone drop. There was no pain. Examination a short time after the accident revealed a semi-globular, distinctly-demarkated tumor at about the middle inner anterior surface of the arm, about the size of a man's fist. Its base was broad, and it had a semi-solid, elastic feel; it was not painful, immovable, the skin over it was normal and could easily be raised, and there was no ecchymosis either on the tumor or its vicinity, or on the whole extremity. No swelling of the axillary glands. The extremity could be moved in all directions without causing pain, nor was its function interfered with in any way, except that the arm became fatigued when the forearm was flexed for a short time. The diagnosis was made of hernia of the biceps following rupture of the fascia. The author thinks that in this case no differential diagnosis is necessary. Rupture of tendon and rolling together of the muscle is excluded, because, if one head had torn off, the second would have offered sufficient resistance, and, if both tendons had torn off, a contraction of the muscular fibres would of course result, but this could not be considerable, because the fascia would naturally prevent it. In addition, the circumscribed tumor would have been absent, and there would have been considerable disturbance of function. Neoplasms were of course excluded. The treatment consisted in rest and placebic liniments. E. F.

Parenchymatous Injection and Infusion of Carbolic Acid into Inflamed Tissues.—According to Hüter, the effect of carbolic acid, when brought in immediate contact with the inflamed tissues, is the destruction of the inflammatory irritants and the production of a globular stasis in the smaller vessels, in consequence of which the morbid process is checked. The author made a large number of injections of watery solutions of carbolic acid (27 per cent.), and has never observed bad results, either general or local. He usually injects one to two grammes of the solution at intervals of one to two days. In acute inflammations rapid moderation of pain is said to take place. In six cases of erysipelas all fever disappeared twelve to thirty-six hours after the injection. The author has always had good results in inflammations of the joints and bones; in joint-affections he injects directly into the synovial capsule, and in caries, with or without fistulous tracts, into the bone after penetration of the softened cortical layer. In cases of hydrocele the author had six cures; the injection was made after evacuation of the serum. At first there was no reaction, but toward the fourth day the scrotum began to swell, and the skin became œdematous, but these symptoms disappeared in a few days after the application of compression. The effect of the injection was similar in a case of dropsy of the præpatellar bursa. In a case of ganglion communicating with the elbow-joint, more inflammation resulted, but nevertheless cure without loss of function. The author believes that in this manner inflammatory processes in bones and joints will always be checked in the beginning; he also anticipates good results in the treatment of tumors by the same means.—*Med. Chir. Centrbl.—D. Zeit. f. Chir.*

Suture of Tendons.—In the *Wien. Med. Wochschrft.*, the case is reported of a laborer, fifty-four years old, who sustained a lacerated wound on the dorsal aspect of the right hand, by which the extensor tendons of the fourth and fifth fingers were torn through; after the wound had healed these fingers could not be extended actively. Two months after the injury he consented to have an operation performed for the restoration of the functions of the fingers. The operation was performed under local anæsthesia, and the operator, Fillauz, easily succeeded in finding the peripheral somewhat swollen tendinous stumps, but the proximal stumps had retracted under the dorsal carpal ligament. The operator, therefore, dissected the tendon of the middle finger, in which he made a longitudinal incision, through which the freshened stumps of the tendons were passed and fixed by wire suture. After the wounds had healed, the patient could extend all his fingers, though there was firm adhesion between the skin and the cicatrix of the tendon. A similar case, with the same successful result, is reported by Le Fort.—*Med. Chir. Centrbl.* E. F.

Soft Chancres in their Relation to Syphilis is the title of a clinical lecture by Jonathan Hutchinson, of London, which appeared in the *Lancet* during last December. His creed he formulates by saying that the soft chancre is produced by pus-contagion, and the hard chancre by a specific virus. The cryptogamic or microphytic character of the syphilitic virus has never been yet demonstrated, although it is so highly probable that we conveniently assume it proved.

Mr. Hutchinson believes that *all living pus is contagious*, and when corpuscles are transferred to a new and *suitable* home excite there the same kind of inflammatory action in which they themselves originated. But the pus must, first, be *living;* that which comes from a chronic abscess may be irritating, but nothing worse. Second, the precise character and stage of the inflammatory process which has produced the pus will be represented in the recipient. The pus of gonorrhœa, in its acute stage, will excite in a conjunctiva an ophthalmia very different from that produced by a chronic gleet. Third, it seems very probable that the pus produced by any special tissue is contagious by preference on some tissue of similar kind. Pus-cells originating in the skin are contagious to the skin; those from the glans to the glans; those from the urethra to the urethra, etc.

It is well known that the true virus of syphilis may produce inflammation, and result in ulceration and the formation of pus. "Let me ask you to believe that the pus so produced is in itself contagious, and you have my theory of all soft and non-infective chancres." The lecturer goes on to disavow his belief that the dualists have, or ever had, the slightest basis for their creed. Chancres differ, it is true; but we have no duality of syphilis. The soft sore is not syphilis at all, and cannot produce syphilis; while, on the other hand, it is not the offspring of a separate specific virus, but comes as a side-result from the *inflammation* accompanying the local manifestation of the one true syphilitic virus. If you could to-day destroy all soft sores and all the secretions capable of producing them by contagion, you must expect to find them reproduced within a few weeks. If, on the other hand, you could destroy all hard chancres, and all the specific germs of syphilis, there would be no reproduction of the disease.

The remainder of the lecture is, for the most part, devoted to explaining all the well-known phenomena connected with the subject, on the theory just indicated. S. B. W.

Intra-cranial Aneurism.—Dr. William E. Humble communicates the history of an interesting case, which is, so far as he has been able to ascertain, the third on record in which the diagnosis was made during life. The first case was reported by Mr. Coe, of Bristol, and the carotid artery was ligated with success. The second was related before the Clinical Society of London, on April 9, 1875, by Mr. Jonathan Hutchinson, and resulted in a spontaneous cure, as demonstrated by the autopsy, death resulting from another cause.

Dr. Humble's patient was a lady aged forty, of active and regular habits, who had, for two or three years previous to this observation, been getting much stouter. For several years she was subject to attacks of hysteria, so severe as to threaten her intellectual faculties, but for a year and a half had been free from them. Both her parents were still living, and she seemed to have no hereditary predisposition except to gout, from which her father was a sufferer; she herself had never suffered from gout, rheumatic fever, or other constitutional affection. She had received no injury to the head, except that ten years ago she struck rather severely against the bough of a tree. The first symptoms that could fairly be attributed to the aneurism were diplopia, photophobia, contraction of the pupil, especially of the right eye, and a slight though decided internal squint of the same eye. Gradually the squint became worse, though the external rectus was not entirely paralyzed, and she complained of constant loud noise in the head. The diagnosis was ventured of a tumor at the base of the brain, and antiphlogistic local treatment, with mercury internally, was resorted to, with benefit to the patient in every way, except that the noise in the head continued as loud as ever, and was the source of great annoyance.

At about this time she mentioned, as a curious circumstance, that her children said they could hear the noise in her head when they placed their heads against hers. On applying the stethoscope to the head, a loud systolic bruit was heard to accompany each pulsation of the heart. The sound was of a blowing character, was heard loudest over the right temple, just above the anterior inferior angle of the parietal bone, thence diminishing in loudness to the vertex, and again louder to the corresponding part of the left side of the head, where it was nearly as loud as on the right side, but sounded more distant. The sound is heard by the patient loud in the right ear and not in the left. The rapidity and loudness of the sound, both to the patient and auscultator, were increased by whatever excited the circulation. The diagnosis was then changed to that of intra-cranial aneurism, probably of the right internal carotid artery in the cavernous sinus, which would necessarily produce the constant noise in the head; would, by pressure on the sixth nerve, cause the strabismus, and, by compressing the fifth nerve, occasion the neuralgia of that pair from which she had long suffered.

Ligature of the carotid was advised, but refused by the patient. She would not give Tuffnell's plan of absolute recumbency and strict diet a fair trial; and Balfour's method with thoracic aneurisms was being used. A further report is promised.—*London Lancet*, Dec., 1875. S. B. W.

Antiseptic Surgery was the subject of discussion at several meetings of the Clinical Society of London, during the latter part of last year, accounts of which may be found in the *Medical Times and Gazette*. A paper by Mr. Callender, on October 8th, entitled "Experiences with Salicylic Acid," was the starting-point. In this paper Mr. Callender concluded that the new agent produces considerable constitutional disturbance, much local irritation and slowness of healing, and therefore prefers to return to his old friend, carbolic acid. This opinion is, as pointed out in an editorial in the *Times and Gazette* of November 20th, in curious contrast with the conclusion arrived at by Thiersch, and also to some extent with that of Lister himself. As might have been expected, the discussions did not lead to any very definite conclusion, but revealed distinctly the fact that there were very few prominent men who followed out Lister's directions in all their details, and for whose results he would therefore be willing to be responsible.

The editorial above referred to divides surgeons, as far as their opinions concerning antiseptics are concerned, into three classes. Recalling to mind the vast difference between subcutaneous and open wounds, the editor thinks that *something* forms in wound-secretions exposed to the air which is injurious, as is generally admitted, though there is no unanimity as to what this something is. Mr. Lister and his strict adherents aim at preventing, by the rigorous use of antiseptics, *the formation or development* of this something. Those who believe in modifications of Lister's method, that is, the use of antiseptics up to a certain point, aim at *destroying* or *rendering harmless* this something which may have formed or developed; and the third class, those who believe in the so-called open treatment of wounds, aim at *allowing this something to escape* freely as fast as it forms. It would seem as if statistics, accurate, detailed, and embracing a large number of similar cases, treated by the various methods, were absolutely necessary to enable one to come to any definite conclusion concerning the usefulness of Lister's method in all its details.

The discussion on the last evening was begun by a paper which Mr. Holmes read, detailing a case in which he had used the antiseptic catgut ligature to ligate the femoral artery in a case of popliteal aneurism in which pressure had proved of no avail. Four days after the operation the patient got drunk, and died on the seventh day. The specimen showed the knot of the ligature, the rest of it having melted away and disappeared, while the artery was perfectly continuous, not having ulcerated through. This case, as well as others narrated at the same meeting, brought out the fact that it was possible for the catgut ligature to be entirely reabsorbed and the wound to heal throughout by first intention, without the formation of a single drop of pus. On the other hand, it was shown that this result was far from being the universal rule, and, in the opinion of some, depended upon whether Lister's method was carried out or not. The editor, in his remarks on this subject, calls attention to the fact that if this ligature be drawn so tight as to divide the inner coat, with the bruising of the outer coats that this implies, it will be found inferior to silk, because from its liability to softening and absorption it does not maintain a firm hold on the artery nearly so long as silk does, and consequently does not give Nature so long a time to complete her safeguards against secondary hæmorrhage.

On the other hand, it seems that the ligature may be so used as to cause ulceration externally, and yet relax so soon as to leave the artery pervious—a very undesirable state of affairs.

The remedy for both these conditions appears to lie in a little more experience as to the proper amount of force to employ in tying it, so as to effectually occlude the artery and allow the formation of a clot, without dividing the internal coat, on the one hand; or causing ulceration or sloughing of the external coat, on the other hand. If union by first intention can be obtained, the chances of secondary hæmorrhage will be much diminished by the adhesion of the soft parts in the immediate neighborhood of the vessel. S. B. W.

OBSTETRICS.

Cysts in the Cervix Uteri.—The formation of cysts in the cervix, the so-called ovula Nabothi, is of frequent occurrence. Though small and numerous at first, they may become very large. Howitz (Hosp. Tid. R. ii., Bd. 2) has seen them as large as a walnut. A number of them may also be developed so that the whole cervix may become changed to an agglomeration of cysts, so that in both ways a series of morbid phenomena may arise from the hypertrophy, deviations, pressure, and functional difficulties. Two forms are distinguished, depending essentially on the cause and the period at which they occur. One is called the *climacteric*, occurring at or near the climacteric period; the other, the *catarrhal* or *inflammatory*, which depends on inflammation of the mucous membrane, or of the submucous tissue, and occurring earlier in life than the former.

In the first variety, as the menses are about to cease, or after they have ceased, the hæmorrhage returns at very irregular periods, is often profuse and persistent. Uterine pains and a whole series of uterine phenomena, with a sensation of weight, etc., may be developed. There is *never* any strong, watery, stinking, or excoriating discharge; and this serves to distinguish it from cancer of the cervix, which presents some similarity to this disease; for, in the exploration, the cervix is felt enlarged, irregular, with greater or lesser projections, and bleeding easily. It is quite possible that a number of cases of so-called cures of uterine cancer were, in reality, cases of cystic development. On pricking the prominences with a pointed knife or a needle, a drop or more of fluid flows out, which is, as a rule, like jelly, and white or grayish in color; the protuberances shrink considerably, and, by a repetition of the process, become very much diminished in volume. In cancer, only blood would follow the incision, and one would at once perceive whether the point entered a cavity.

In the second form, the menses become very protracted, but there is no very great loss of blood. Occasionally, there is considerable dysmenorrhœa, sterility, a sensation of pressure, and the well-known series of uterine phenomena. It will most frequently be found that an inflammatory condition has preceded—a metritis or a catarrhal endometritis. The cervix feels changed in various ways; sometimes there are single large swellings which may entirely change its form and displace the orifice; sometimes both lips and the whole portio vaginalis are more uniformly swollen, as in a hyperplasia, and the finger feels a number of small projections. With the speculum one sees either a number of yellow spots, like small yellow peas, projecting slightly above the surface, or numerous bluish, translucent, slightly prominent spots, more or less clear, firm, and distended. On puncturing the former there is an escape of a cheesy mass, degenerated cellular substance, and from the translucent ones, from a few drops to a spoonful of a gelatinous fluid. In some patients, on scraping the cervical canal, small mucous polypi are scraped off; sometimes, from the rupture of the cysts, a tenacious fluid is poured out. The puncture assists in diagnosing these cysts from fibroids of the cervix, cancer, and simple hyperplasia.

The treatment consists in emptying as many of the cysts as possible, doing this thoroughly to a certain number at each *séance*, and brushing the portio vaginalis every two or three days with tincture of iodine.—*Nord. Med. Archiv*, vol. vii., No. 3. G. R. C.

Compression of Pelvic Organs from Uterine Fibroids.—According to Dr. Hüe (*L'Union Méd.*, August, 1875), uterine fibromas frequently give rise to compression within the pelvis, although literature presents but few such cases. It is not alone the largest tumors which give rise to this, but also the smaller ones, which have their seat in the pelvis minor. In fourteen cases of this kind observed by Dr. Hüe, the compression concerned four of the most important urinary organs, and produced pathological changes in the kidneys, and lethal uræmic intoxication as a result of impermeability of the ureters. In two cases death was the result of distention of the bladder simultaneously with affections of the kidneys and ureters. In eight cases the intestinal canal was compressed, producing a more or less complete occlusion. Death resulted from the compression in no less than thirteen of the fourteen cases.

According to the author's observation, uterine fibroids are very rarely accompanied by adhesive peritonitis. These tumors are, therefore, very seldom adherent to the neighboring organs, and we are in consequence justified in attempting to push them up into the pelvis major, even though there might be some danger of thus causing a traumatic peritonitis. Guéniot, who made the communication to the *Société de Chirurgie*, is in complete accord with this opinion, the more so as he has already advised a similar procedure in compressed uterine fibroids in the pelvis minor. He advises that the patient be placed with the head down and the pelvis elevated, whereby all the pelvic organs gravitate toward the diaphragm. By this procedure, Hüe succeeded in two cases of recent date in removing the pressure and relieving the patients from the danger which threatened them. The patients were placed crosswise on the bed, resting on the knees and elbows, the thighs disposed so as to relax the abdominal muscles, and directed to inspire as deeply as possible. By the aid of the hand in the vagina, he exerted an equable pressure from below upward on the tumor, and soon noticed that it began to yield and glide upward through the brim of the pelvis, until finally it could be felt prominent in the hypogastrium, where it was retained by the application of a bandage. The following day thirty to forty grammes of oil were administered, causing diarrhœa for several days, after which the patient was quite well.

From the observations of Hüe, and analogous cases communicated by other surgeons, Guéniot presents the following conclusions:

1. Uterine fibroids, fortunately, very rarely give rise to a complete and enduring occlusion of the intestine, but, on the contrary, may frequently induce a more or less serious disturbance in the evacuation of the urine, defecation, and the functions of the nerves of the pelvis.

2. Albuminuria and various serious affections of the kidneys occasionally result from this impediment to the evacuation of the urine.

3. It is by no means the largest fibromas which give rise to the worst cases of compression; the most dangerous, in this regard, are those tumors

which are seated in the pelvis minor, and which develop within its solid bony walls, instead of rising up into the abdominal cavity.

4. With compression there are various complications which enhance and excite these perilous conditions, such as large accumulations of hard excrement, peritonitis, peritoneal adhesions, ulcerations of the intestine, atony of the intestine as a result of long-continued use of opiates, etc.

5. So long as the tumor remains in its place the treatment, wherein enterotomy has played a prominent *rôle*, is almost entirely powerless; whereas, on the contrary, cases are constantly relieved where it is possible to force the tumor up into the abdominal cavity.—(*Ugeskrift für Laeger*, September, 1875.) G. R. C.

Ergot in Obstetrics.—Dr. G. Levi gives the results of his study of the physiological and therapeutical action of secale cornutum in its especial application to obstetrics. He has endeavored to discover what or which of its constituents act principally in individual cases. From all the facts collected and from the investigations he has made, the following conclusions are derived:

1. The sum of the therapeutical effects derived from ergot are due to the presence in it of phosphoric acid.

2. The diseases for which ergot is a useful remedy receive equal benefit from phosphoric acid.

3. With secale cornutum two distinct series of phenomena are produced by elements of different natures: the physiological (ergotism) recognize as a cause the vegetable principles (ergotine, ecboline, etc.); the obstetrical, on the contrary, the phosphoric acid.

4 The hæmostatic effects, like the ecbolic, are obtained equally, and with the same promptness and intensity, with phosphoric acid as with secale cornutum.

5. The quantity of soluble phosphoric acid found by analysis in recently-pulverized ergot, in that which is old, and in the hydro-alcoholic extract (ergotina), is proportional to the obstetric effects which are obtained from these various substances separately.—*Lo Sperimentale*, August and September, 1875. G. R. C.

THEORY AND PRACTICE.

Treatment of Constipation and Diarrhœa with Water and Tincture of Camphor.—Every one knows how difficult defecation sometimes is for those persons who are afflicted with habitual constipation. In such cases relief is often sought from injections of cold water, with the occasional addition of oil or soap. The following clyster is recommended as infallible in such cases:

Take a tumbler and fill it half-full of water at the temperature of the room, pour in a few drops of tincture of camphor, just enough to give the water a slight sapidity, then fill the glass with water. Inject this slowly into the rectum till about sixty or eighty grammes have been introduced. At first no effect is perceived, but in about ten minutes the desire to defecate becomes irresistible. The effect becomes energetic in proportion to the quantity of tincture of camphor added. After the defecation it is well to repeat the injection of a small quantity of the same mixture and retain it in the rectum, which can readily be done, so as to prevent constipation on the following day.

Although at first sight it may seem rather improbable, the same remedy is also useful in checking diarrhœa, even though it may have been persistent. The injection should be extremely slow; after the dejection it should be repeated two or three times. The quantity of tincture of camphor should also be increased.—*Gazz. Med. di Roma* and *Gazz. Med. Prov. Venete*, January, 1876. G. R. C.

Chloral Baths in Variola.—Dujardin Beaumets reports that he has obtained excellent effects from general baths of chloral, in cases of confluent variola at the period when the epidermis, detaching itself *en masse*, leaves the dermis exposed. The quantity of chloral used in each bath has not exceeded twenty grammes. In this manner is obtained not only the disinfection of the patient, but also a prompt cicatrization of the skin.—*Bull. Gén. de Thérapeutique*, November, 1875. G. R. C.

On Melæna of the New-born.—Dr. L. Landau, of Breslau, in an elaborate monograph on this subject, arrives at the following conclusions: 1. Almost all uncomplicated cases of melæna which affect otherwise healthy children depend on material alterations of the gastric or intestinal mucous membrane, ulcer of the stomach or duodenum, rupture of an artery or vein. 2. The gastric and duodenal ulcers are not of intra-uterine origin, nor are they dependent on a fœtal inflammation of the stomach. 3. Contrary to the assumption of all authors (Buhl, Hecker, etc.), they occur in connection with processes during birth, and are due to derangements in the circulation. In most cases, an embolus of the afferent artery is the cause.—In those cases in which several extravasations and defects in the mucous membrane of the stomach and intestine are found, it is possible that an embolus has not been the cause; but the occurrence of embolism must be assumed for those cases in which there are no other alternatives (extravasations, etc.). 4. The embolus originates, either from a secondary thrombus of the ductus arteriosus, or from a primary thrombus at the point where the umbilical vein is compressed. The most essential condition for its transfer from this location is an incomplete development of the pulmonary circulation; that is, a check in the first inspiration. Other pathological conditions, likewise, result from this derangement, such as thrombosis of the ductus arteriosus with its consequences, emboli in the systemic and pulmonary circulation, abdominal apoplexy so called (liver, spleen). 5. More often the gastric and intestinal ulcer is difficult to diagnosticate, especially when there is no hæmorrhage, which is not essential. The condition is more frequent in female children, just as the gastric ulcer is most common in female adults. 6. Those cases of melæna in which no material changes were found, are due to the same cause as those in which ulceration occurs, namely, circulatory disturbances from checked respiration, and increased tension in the venous system. The causes of hindered respiration in the new-born are manifold: aspiration of mucous, pressure during labor, etc. The hæmorrhages in these cases, which mostly recover, while the others almost always end fatally, take place from gastric or intestinal veins. E. F.

Hypodermic Injections of Distilled Water.—The *Progrès Médicale* again calls attention to this method of anæsthesia, introduced by M. Lafitte, of Paris. A patient attacked with the most acute articular rheumatism has obtained almost instantaneous relief, and could move, after the injection of water in the vicinity of the painful joints. M. Lafitte reports the case of a woman afflicted with the most painful lumbago, which was immediately relieved by the injection of four syringefuls of distilled water. Cases of facial neuralgia, pleurodynia, sciatica, etc., are reported, in which the results, however, were not always definite. M. Lafitte believes that, after more extensive trial of this agent, we may have acquired a remedy which, without the disadvantages of morphine, possesses its efficacy as an anæsthetic. E. F.

On some Complications of Typhoid Fever.—The following remarks were made by M. Hayem at the Hôpital de la Charité, in regard to some of the complications of typhoid fever:

Myositis.—In all acute dyscrasic affections with profound alterations of the blood there is a general acute degeneration in the muscles. In some cases a true localized myositis, with hæmorrhages of variable intensity, takes place; sometimes the bloody effusion becomes encysted and forms an hematoma, which may inflame and lead to the formation of an abscess. The most common seat of these hæmorrhages is the abdominal muscles. They have been attributed to muscular ruptures, but in some cases they are due to infarctions. They may occur in even the mildest cases. At first there are intense pain and cutaneous hyperæsthesia in the region of the affected muscle, and puffiness of the deeper parts; later, a slight ecchymosis shows itself, and coolness of the surface over the affected region. At the same time the general condition of the patient suffers. The local treatment consists in anodyne-poultices and opening of the abscess as soon as fluctuation is perceptible. The general condition requires tonics and large doses of quinine.

Pulmonary Complications.—Typhoid fever is always accompanied by bronchial catarrh and pulmonary congestion toward the fourth or fifth day of the disease. Usually this is a catarrh of the larger bronchi, but in some cases the catarrh is sufficiently intense to become propagated to the smaller bronchi, and toward the third week there may be capillary bronchitis and pulmonary collapse. M. Woillez ascribes these complications to pulmonary congestion. Hypostatic pneumonia occurs during the third week, and is characterized by dyspnœa and diminished resonance at both bases. In some cases it gives rise to isolated lobular inflammation, usually unilateral, and presents the ordinary signs of pneumonia, but with less expectoration. Its course is the same as in the uncomplicated variety, and the prognosis is not unfavorable, provided the patient is not too debilitated; the absorption of the exudation, however, is less rapid.—Pleurisy is seldom primary, and is more generally secondary to pneumonia or capillary bronchitis.

In regard to ergot, M. Hayem stated that he had used it to reduce the temperature; the results obtained had been very satisfactory, and he preferred it in this disease to either quinine or digitalis. Under the influence of ergot the defervescence is much more rapid, and the temperature tables, at the height of the disease, in place of exacerbations, showed plateaus. In several cases in which ergot had only been given during the day, the evening temperature was less elevated than that of the morning. The dose varies between two and three grammes in the twenty-four hours.—*Rev. Méd. Chir. Thér.*, No. 19, 1875. E. F.

Chorea cured by Chloral.—A case of obstinate chorea is reported by M. Guyot, in the *Gaz. Hebdom.* (December 10, 1875). Strychnia, arsenic, eserina, cold douches, atropia, bromide of potash, opium, chloral, by the mouth, subcutaneous injections of chlorhydrate of morphia, were successively tried for a period of months, with but temporary benefit. Finally chloral was injected *per rectum*, twice a day, beginning with three-gramme doses, increased to four afterward. In three days improvement was quite marked, and after a fortnight's continued employment of the injections the chorea disappeared entirely, and had not returned six months later. E. H. B.

Treatment of Intestinal Obstruction.—In the *Gaz. Hebdomad.* (December 31, 1875) two cases of successful treatment of intestinal obstruction are quoted. The patient in one case had had no dejections for nine days; there had been fecal vomiting for several days. The abdomen was tympanitic and distended. Injections had been tried thoroughly for several days without effect. Immediately afterward an injection of bicarbonate of soda (30 grammes) and tartaric acid (14 grammes) was employed. Carbonic acid being thus generated, a copious stool followed. This was repeated, and in a few days the patient was entirely well. In a second case where purgatives and clysters were also found ineffective, and the patient lay in a dangerous condition, with distended abdomen, prostration, and feeble pulse, pain, and vomiting, an injection containing Seidlitz powders (six packets of each, blue and white) was entirely successful, and in a few days the patient was able to go about his business. E. H. B.

MEDICAL JURISPRUDENCE.

New and Simple Method of detecting the Presence of Blood in Various Fluids and Tissues.—In the "Jahresbericht d. phys. Ver." at Frankfort-on-the-Main, Prof. Boettger, in referring to the importance, in its forensic relations, of distinguishing blood from other red coloring-matters, observed that the analytical methods, which were in vogue for a long time, had given very incomplete and uncertain results till Dr. Teichmann, in 1853, called attention to a new method of recognizing blood-stains. He found that red blood, by being acted on by acetic acid, forms red microscopic crystals, which, in distinction from those previously known, received the name of hæmin crystals. These brownish-red hæmin crystals in rhombic plates are so certain to form from blood stains, and are so easily distinguishable from other bodies under the microscope, with a power of about 280, that they furnish a certain means of recognizing and distinguishing blood-stains. A method recently recommended by Prof. Almen, for the recognition of blood, especially in the urine, is likewise very simple and certain, and is more particularly adapted for clinical purposes. It consists in mixing, in a test-tube, several cubic centimetres of tincture of guaiacum with an equal volume of oil of turpentine, to which there is added a small quantity of the suspicious urine. If blood, though only in traces, is present, a more or less intense blue (often almost indigo-blue) coloration of the precipitated resin immediately takes place; in normal, albuminous, or purulent urine, this blue coloration is not produced. Prof. Boettger proves the presence of blood-stains on tissues, wood, etc., as follows: 5 cubic centimetres of a clear filtered solution of 5 grammes resin of guaiacum, in 100 cubic centimetres of alcohol, are mixed in a test-tube with an equal volume of rectified oil of turpentine. The stain, however small and indistinct, on linen, wood, etc., after previously having been treated with weak acetic acid and warmth, on addition of some of the above solution, immediately assumes an intense blue color.—*Med. Chir. Centralblatt*, No. 42, 1875. E. F.

Artificial Alimentation by means of Subcutaneous Injections.—In 1869, Menzel and Perco published the results of their researches on the absorption of certain alimentary matters through the medium of the subcutaneous cellular tissue. It was found that quantities of fat, varying from 4 to 30 grammes, were absorbed forty hours at the latest after they had been injected under the skin. Solutions containing sugar, milk, yolk of egg, etc., behaved in the same manner. Stricker and Oser had previously already succeeded in causing the absorption of peptones introduced in the same way. Dr. J. Krueg (*Wien. Med. Wochenschr.*, No. 34, 1875) has pursued these researches, and cites the case of an insane man, aged fifty-seven years, who obstinately refused to take food, and had been nourished by the œsophagus-tube for twenty-seven months. Of late he had decided to eat only on certain days, but the introduction of the œsophagus-tube, which was still occasionally necessary, was so difficult of accomplishment that the patient was almost asphyxiated at each attempt.

As nourishment had entered the stomach only once during ten days, the author, in order to sustain the patient's life, resolved to try subcutaneous injections. He employed a syringe of about 15 centimetres capacity, connected by a rubber tube with the canula of an ordinary hypodermic syringe. At first 15, then 80 grammes of oil were injected daily under the skin at five different points. The operation sometimes lasted an hour on account of the difficulty with which the oil escaped from the canula. When the injection was made very slow it was entirely painless. For nine consecutive days the patient was nourished exclusively by the aid of these injections. On the tenth day he decided to eat. Later, when the patient again refused food, the author carefully injected the white and yolk of an egg beaten. This injection was followed by inflammation and abscess at the seat of puncture.—*Gaz. Méd. de Paris*, 45, 1875. E. F.

Miscellany.

Appointments, Honors, etc.—Dr. L. D. Bulkley has been appointed Visiting Physician to the Epileptic and Paralytic Hospital, Blackwell's Island, in place of Dr. E. C. Seguin, resigned. Dr. S. S. Bogert has been appointed House Physician to the Eastern Dispensary of this city. The Dispensary has recently received a legacy of upward of $10,000 from the estate of its late President, William Dennistoun, Esq., which has been permanently funded. Dr. William Detmold has been appointed Consulting Surgeon, and Dr. Jared Linsly Consulting Physician, to the Presbyterian Hospital. Drs. C. K. Briddon, John H. Hinton, and L. A. Stimson, have been appointed Attending Surgeons to the same institution. Dr. William H. Mussey, of Cincinnati, has been appointed Surgeon-General of the State of Ohio.

George D. Pollock, M. D., has been elected President of the Pathological Society of London for the year 1876, and Wilson Fox, M. D., Vice-President. M. Chatin has been elected President of the Académie de Médecine of Paris for 1876, and M. Bouley Vice-President.

Kings County Medical Society.—At the last annual meeting the following gentlemen were elected for the ensuing year:

Alexander Hutchings, M. D., President; J. S. Prout, M. D., Vice-President; R. M. Wyckoff, M. D., Secretary; J. D. Rushmore, M. D., Assistant Secretary; G. G. Hopkins, M. D., Treasurer; W. W. Reese, M. D., Librarian; Drs. Baker, Buell, Burge, Jewett, and Matthewson, Censors.

Medical Board of Bellevue Hospital.—At the annual election of officers of the Medical Board of Bellevue Hospital the following officers were elected: President, Alonzo Clark, M. D.; Vice-President, Austin Flint, M. D.; Secretary, Edwin G. Janeway, M. D.; Committee of Inspection, Drs. Walker, Thompson, Janeway, and Clark; Committee of Examination, Drs. Wood, Sands, Loomis, and Polk.

The Italian Medical Association.—The next meeting of this active Association is to be held in Turin from the 18th to the 22d of September next. The communications are to be limited to twenty minutes each, and in the discussion following no speaker may occupy more than ten minutes. There will be three grand sections—medicine, surgery, and hygiene—and a number of subsections.

The Late Dr. Anstie.—A highly-interesting review of the life and labors of this talented gentleman, whose untimely death is universally lamented, will be found in the *Practitioner* for January of the present year. It is written by Thomas Buzzard, M. D., his intimate friend and associate. The same journal gives a fine portrait of Dr. Anstie, engraved from a photograph.

A Health-Resort in Egypt.—It is announced that the Messrs. Cooke & Son purpose the establishment of a well-appointed sanitarium just above the first cataract of the Nile. The situation is to be on the right bank of the river, opposite the island of Philæ. The mean temperature during the winter months is said to be about the same as that of England in summer.

Medicated Ice.—Dr. Edward Martin states in the *Lancet* that he has found medicated ice a simple and convenient means of topical medication in the scarlatinal sore-throat in children. He freezes a mixture of sulphurous acid, chlorate of potass, or other medicine, and water, by means of a large test-tube immersed in pounded ice and salt.

Death from Chloroform.—The *Medical Times and Gazette* reports the death of a man, aged twenty-two years, in the Stephen's Hospital, Dublin, from the administration of chloroform. Circumcision had been performed, and the patient had recovered consciousness, when sudden syncope and death occurred.

Professional Amenities in Australia.—For bitter sarcasm and broad personalities, such as would put a Western political editor to the blush, commend us to the *Melbourne Medical Record.* Almost every issue of that periodical contains columns of satire directed against medical gentlemen who have been so unfortunate as to incur the displeasure of the editor.

The New York Pathological Society.—This Society has determined to commence with the year 1875 the publication of its "Transactions," incorporating the material of former years under classified headings. Dr. John C. Peters is to be the editor, and Drs. E. C. Seguin, T. E. Satterthwaite, and George F. Shrady, the Committee of Publication.

Death from Chloral.—The *Medical Times and Gazette* of January 15th reports the death of a lady from taking 125 grains of chloral hydrate within two hours. She had been in the habit of taking it for two years, as on this occasion, without medical supervision.

The Late Sir Anthony de Rothschild.—The death of this distinguished gentleman was caused by a large medullary growth springing from the pelvis, which by pressure on the adjacent parts gradually exhausted the strength and finally produced fatal uræmia by compression of the ureters.

The Riberi Prize.—A prize of twenty thousand francs is offered by the Academy of Medicine of Turin, for an essay, in Latin, French, or Italian, on the "Female Genital Apparatus." Two copies must be sent in before the close of the present year.

Recent Works on Diseases of Women.—The *British and Foreign Medico-Chirurgical Review*, No. cxiii., January, 1876, contains an able and comprehensive review of the works of Thomas, Barnes, Bennet, Schroeder, and Atthill, on diseases of women. As these works are now before the profession, a decided opinion of their comparative merits from so high an authority is of general value and interest. We therefore make the following extracts from the *Review:*

By way of general notice of the works before us, we may remark that Dr. Thomas's work is a model of perfection, classical and yet clinical in all its details—concise and yet ample in its description of disease; systematical, complete, and circumstantial. It is but five years since its first appearance, and already a fourth edition, a goodly octavo of eight hundred pages, with nearly two hundred illustrations, has been called for. No wonder that the Germans, French, and Italians, have deemed it worthy of translating into their own languages.

The author regards the subject from no limited point of view, neither inclining too much to the theory that inflammation is the prime factor in the production of all uterine disease, nor to the mechanism theory so strongly advocated by others.

The great charm of the work is, that under the one heading we are seeking, whether it be dysmenorrhœa, sterility, or metritis, we find everything we need, a veritable *multum in parvo*, not merely his own opinion, but those of any and every recognized author who has written on the subject, which is treated systematically under the various divisions of definition, varieties, synonyms, frequency, anatomy, pathology, prognosis, predisposing and exciting causes, symptoms, physical signs, course, duration and termination, complications, history, diagnosis, differentiation, and treatment; these headings being, of course, varied occasionally to suit the requirements of the subject.

Dr. Barnes's somewhat bulky volume of over nine hundred pages professes "to give such a description of the medical and surgical diseases of women as will assist the medical practitioner in their diagnosis and treatment.

"To some physicians the bulk of the volume may seem excessive. I would suggest the reflection that this apparent excess may represent the extent of their neglect . . . . In a subject of comparative recent inquiry, necessarily, to some extent, unsettled and open to controversy, a fuller statement of fundamental facts, and more argumentative discussion, are called for than are necessary in the exposition of the more generally cultivated departments of medicine."

We extract these remarks from the preface, that the reader may form an idea of the scope of the work.

Those who intend making the diseases of women a study, we would by all means counsel to procure the volume. There is a fund of information in it, much original research, and many valuable contributions from the author's own practice and experience.

Dr. Bennet's work professes to be "a practical treatise on inflammation of the uterus, its cervix and appendages, and on its connection with other uterine diseases."

Thomas, in his "Historical Sketch of Gynæcology," has truly said of it that "no work of modern times, written upon any subject connected with our profession, has exerted a more decided and profound influence."

However others may differ from him, no candid mind can deny the obligation under which Dr. Bennet has placed his brethren, by arousing their attention and directing their investigations into proper channels. It is now nearly thirty years since Dr. Bennet startled the professional world by his then novel assertions: "endeavoring to demonstrate the important fact that inflammation was the keystone to by far the greater part of the morbid condition which constituted uterine pathology, and, unless the phenomena which it occasioned were recognized and taken into consideration, all was doubt, obscurity, and deception. . . .

"These views, appearing as they did at a time when the field of uterine pathology was almost entirely uncultivated, and characterized as they were by a great deal of persuasive force, produced in this country a marked impression," many earnest investigators accepting them in their entirety; others, again, repudiating them with all the bitterness and opposition that only ignorance and prejudice could justify. It may be well here to state broadly what those views are:

"1. Inflammation is the chief factor in the uterine affections, and from it follow, as results, displacements, ulcerations, and affections of the appendages. 2. That menstrual troubles and leucorrhœa are merely symptoms of this morbid state. 3. That, in the great majority of cases, inflammatory action will be found to confine itself to the cervical canal, and not to affect the cavity of the body. 4. The propriety of attacking the disease in its habitat by strong caustics."

It would be well for those who advocate so strongly the mechanical system of uterine pathology, who assert that patients suffering from uterine symptoms are almost universally found to be affected with flexion or alterations in the shape of the uterus of easily-recognized character, if they would again carefully peruse the work of Dr. Bennet and test the doctrines therein stated by the experience of every-day practice. We feel confident their success would be greater than the mere mechanical system affords. The tendency, at present, is toward the opposite extreme of the views so ably advocated by Dr. Bennet.

Schroeder's work is of more interest pathologically than clinically. We are much indebted to the Germans for their painstaking pathological researches, which have thrown much fresh light upon hitherto vexed questions; and, were the clinical remarks as clear and ample as the pathological, we could speak far more highly of many of their modern treatises, regarded from a practical point of view. Schroeder's volume forms no exception to these. There is very much in it of valuable and useful information, but we cannot indorse the announcement that it fully comes up to the present standpoint of clinical medicine; we notice many obvious defects in this particular matter, and the treatment generally is sketchy and vague.

Dr. Lombe Atthill's little work does not profess to be an exhaustive treatise, but merely clinical lectures on the diseases of women.

He considers the subject solely in its clinical aspect, dealing with it, for the most part, from the standpoint of symptomatology, which, after all, is the one from which the student mainly regards it. It is all very well for the experienced gynæcologist, who has made diseases of women his special study, to impress the importance of regarding and treating conditions such as leucorrhœa, menorrhagia, sterility, etc., as symptoms of uterine and vaginal disease, and not as primary affections; but it is only by experience that we can determine what are symptoms, and what are diseases *per se*, and this the student has yet to learn. For this reason we are not surprised to find that Dr. Atthill's work has attained to a third edition since its first appearance in 1871. Although it professes to be by no means complete or exhaustive, and in many instances is merely colloquial, it is, we are compelled to say, without any wish or intention of saying anything severe, too superficial; nevertheless, we may regard it as a concise summary of the practice carried out by the author in the Adelaide Hospital.

Health and Longevity.—Dr. Reginald Southey, in a recent lecture on "Hygiene," reported in the *Lancet*, has the following observations on health:

> Health and longevity are not synonymous; neither are health and great muscularity. The most muscular men, great prize-fighters, men who could fell an ox with their fists, have been known to be always ailing, and complaining about themselves. The state of perfect training, regarded by those who know little of it, as a condition of most perfect health, is rather one of morbid imminence. Longevity, like height, is a race attribute, but it does not signify health. The three oldest people I ever knew, women who reached respectively eighty-nine, ninety-eight, and a hundred, were valetudinarians, and had been so nearly all their lives.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from January 14 *to February* 13, 1876.

McCormick, C., Surgeon.—Relieved from duty as Medical Director, Department of California. S. O. 15, A. G. O., January 21, 1876.

Keeney, C. C., Surgeon.—To report to the commanding general, Department of California, for assignment to duty as Medical Director of that Department. S. O. 15, C. S., A. G. O.

Williams, J. W., Assistant Surgeon.—Leave of absence still further extended one month. S. O. 15, C. S., A. G. O.

Hubbard, Van Buren, Assistant Surgeon.—Granted leave of absence for two months. S. O. 26, A. G. O., February 7, 1876.

Merrill, J. C., Assistant Surgeon.—Assigned to duty at

Fort Brown, Tex. S. O. 9, Department of Texas, January 17, 1876.

Hall, Wm. B., Assistant Surgeon.—Assigned to duty at Fort Wrangel, Alaska Ty. S. O. 6, Department of the Columbia, January 11, 1876.

Taylor, M. E., Assistant Surgeon.—Assigned to duty at the post of McComb City, Miss. S. O. 9, Department of the Gulf, January 14, 1876.

Obituary.

Dr. George H. Hubbard, of Lansingburg, N. Y., died January 19, 1876, at the age of fifty-three years. He was born in Bradford, N. H., and studied medicine at the Vermont Medical College. He practised his profession for several years in Manchester, N. H., where he attained a prominent position. In 1861 he was appointed surgeon of the Second New Hampshire Volunteers. On September 30, 1861, he was appointed brigade surgeon, United States Volunteers, in Burnside's division, Army of the Potomac. During the war he held the following positions: Medical Director for District of Northern Missouri; surgeon in charge of General Hospital, Tipton, Tenn.; hospital-surgeon, steamer Louisiana; chief-surgeon, Third Division, West Tennessee; chief-surgeon, Army of the Sixth Division of East Tennessee; chief-surgeon, United States General Hospital, Paducah, Ky.; Medical Director, Army of the Frontier; Medical Director, Army of Arkansas; surgeon commanding United States General Hospital, Troy, N. Y. He was in the following battles: Bull Run; Pittsburg Landing; Prairie Grove, Ark.; Moscow, Ark.; and Junkin's Ferry, Ark. He was brevetted lieutenant-colonel United States Volunteers, October 6, 1865, and mustered out of the service October 13, 1865. Since that date he had been practising in and near Lansingburg. At one time, about 1850, he was editor of the *New Hampshire Journal of Medicine.—Philadelphia Medical and Surgical Reporter.*

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Original Communications.

ART. I.—*On Stricture as the Initial Cause of Gleet, with Remarks on the Urethral Calibre. Being a Reply to the Paper of Dr. H. B. Sands on the same Subject.*[1] By F. N. OTIS, M. D.

PROF. HENRY B. SANDS opened his interesting and able paper "On Gleet, and especially in its Relations to Urethral Stricture," with these words: "*The humiliating confession must be made, that many important surgical problems remain unsolved.*" This was the statement of a fact, which, in his opinion, was especially applicable to the subject which he was about to discuss.

In so many words, then, he confessed that gleet, and especially in its relations with urethral stricture, was a problem for which he had, as yet, found no satisfactory solution. The object of the paper, as stated, was simply to excite discussion, and particularly with reference to views which had been advanced by me, in which I claimed to designate the true nature and cause of gleet, and the only effectual and radical cure for this acknowledged opprobrium of surgery.

Proceeding then to the definition of gleet, Prof. Sands referred to *idiopathic* gleet—gleet depending upon a *strumous diathesis*, *prostatic gleet*, *masturbators' gleet*, etc., and remarked, that "we shall avoid much confusion, by giving to the word the restricted meaning ascribed to it by John Hunter and Sir Astley Cooper, and regard it as an *imperfect* or *chronic gonorrhœa*." Now, as this matter is presented, avowedly, for the purpose of discussing my peculiar views in regard to *gleet*, and its *relations* to urethral stricture, I shall most decidedly object to any such definition of gleet, as being, not simply imperfect, but, as conveying impressions, which, of necessity, will often lead to grave errors in the diagnosis and treatment of gleet.

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[1] Published in this March number of this JOURNAL.

I have stated it to be the rule, that all gleet depends upon *stricture*, not that, all gleet depends upon *gonorrhœa*. It seems to me, then, from my point of view, that, in order to consider the question of *gleet* intelligently, we must first discuss the nature and causes of *stricture;* having settled these points, the different varieties of *gleet* will be sufficiently indicated. In regard to the nature and causes of gleet, in the opinion of Prof. Sands, this disease is simply *catarrhal*.

1. He says: "Gleet depends upon a chronic inflammation of the urethral mucous membrane, either diffused over a greater part, or limited to spots, chiefly to the fossæ navicularis and bulb.

"2. Gleet depends upon inflammation of lacunæ opening into the urethra.

"3. Gleet depends upon *stricture of the urethra*."

Supported by these three postulates, Prof. Sands takes exception to my claim that "*gleet always depends upon stricture*."

A *careful*, not a *hypercritical*, examination of his position will, I believe, tend to simplify the assumed points of difference, between Prof. Sands and myself, in regard to the causes of gleet, very materially.

I do not deny that it is a chronic inflammation; nor that it is sometimes found to be diffused over a great part of the urethra; nor that it is sometimes confined to spots; nor yet that it may occupy the continuous lining of the lacunæ and mucous follicles. In the present discussion, however, the locality and pathological results of gleet are not so much at issue, as the *cause* of the *continuance* of those conditions upon which the muco-purulent discharge, which we call *gleet*, depends.

I have so often seen *diffused* and *localized* inflammatory conditions of the urethral mucous membrane associated with urethral stricture, and have so constantly seen them disappear, upon the division of the stricture, that I do not hesitate to affirm my conviction that *all granular spots in the urethra* are the result of retention of acrid urine, behind strictures more or less salient; and that the most favorable condition to induce implication of the lacunæ magna and the deeper sinuses and follicles is the presence of an anterior stricture.

The term *gleet* is used by Prof. Sands as indicating an imperfect or chronic gonorrhœa. Now, gonorrhœa is a self-limited disease; an active inflammation, produced by contagion, which continues, according to our best authorities, for three or four weeks, under the most judicious treatment (and I may here add, whether treatment is had or not—for it is the rule that, in favoring physical conditions, it gets well, in about that time, with no treatment whatever). Prof. Sands says: "A gonorrhœal discharge, after it has continued from one to four weeks, *almost always* diminishes in quantity, becomes thinner and less opaque, and, in favorable cases, disappears altogether." Again he says, "*Not unfrequently*, the discharge *does not* disappear, and *may continue indefinitely*." The difference, then, between gonorrhœa and "chronic or imperfect gonorrhœa" or *gleet* is, that the one gets well and the other continues indefinitely. In order to ascertain the reason of this continuance of a gonorrhœa—to find what constitutes the *punctum malum*—the essential difference between the favorable and the unfavorable cases, Prof. Sands gives a *résumé* of the results of the pathological researches of Sir Astley Cooper, Rokitansky, and Sir Henry Thompson. In some cases, unusual vascularity was found at the fossæ navicularis; in others, general tumefaction of mucous membrane; enlargement of follicles, relaxation of sinuses, etc., and yet in other cases "*no abnormal appearance could be detected*." The summing up, then, of *these* researches seems to shed no light upon the *cause* of gleet; it simply presents the results of long-continued inflammation, of a low grade, in certain cases; while the fact that, in other cases, *nothing abnormal* was found, is a sufficient commentary on the value of this method of ascertaining the cause of gleet. The pathological *résumé*, then, simply shows, that the cause of gleet was not determined by any *post-mortem* examination. Prof. Sands then cites the results of observations during life. First, soreness and smarting, he says, may exist and mean nothing; frequent desire to micturate *may* mean the presence of a morbid process in the urethra; sensation of straining *may* point to urethral trouble, but gleet *may exist* and *persist*, unaccompanied by any morbid sensation. Circumscribed granular spots *may* exist, and be revealed by the endoscope, but cannot be regarded as the *sole* cause of gleet.

Observations during life, then, do not afford any definite information as to the *cause* of gleet.

The results of the action of remedies are then invoked to discover the cause of gleet. "Sometimes," says Prof. Sands, "its removal is favored by a spare, and at others by a generous diet. Sea-bathing and tonic food and medicines have cured many a gleet, that has resisted the ordinary specific remedies for the disease. In a strumous, gouty, or rheumatic diathesis, appropriate constitutional treatment may become necessary. "Copaiba and cubebs," he says, "have always and deservedly been held in high esteem. Alkalies also are not without value in certain cases. . . . In my own experience, however," says Prof. Sands, "*local* treatment has generally proved the most efficient in the removal of gleet. Injections, mild or strong, superficial or deep; the occasional introduction of a full-sized bougie into the bladder. *When these fail*," he remarks, "the disease will often be found to depend upon *stricture of the urethra*."

I am quite willing to concede the influence of all the remedies and plans of treatment above enumerated. I recognize the fact that, whatever be the cause of a catarrh of the urethral mucous membrane, a condition of constitutional plethora, or, on the other hand, of extreme debility, would favor its continuance; and that irritating urine, such as would indicate the use of alkalies, copaiba, cubebs, etc., in any other trouble, would tend to palliate a gleet—nay, possibly, even cause the cessation of the discharge, where it was kept up by the irritating quality of the urine. But it is a very well-known fact (and I am quite sure that it will not be disputed by my friend Prof. Sands) that *cessation* of the discharge does not mean *cure*. The reason, the chief, I believe, that has induced the professor to include the cure of gleet among the "unsolved problems of surgery" is, that, after cessation, under the varied treatment quoted, the discharge will, as a rule, return. A slight indiscretion in diet, a little vinous excess, a little venereal indulgence, of the most unexceptional character, *will bring back the gleet.*

The results of treatment, then, if they do not indicate the *cause* of gleet, teach us, at least, that it is not in any condition which such treatment can permanently control. Prof. Sands says, "When these and other similar methods of treatment fail, the disease will often be found to depend upon a stricture of the urethra."

Now, I would like to ask, in the most friendly and scientific spirit, why it is considered necessary to go through the above-mentioned category of constitutional remedies, and gleet specifics, and injections, and bougies, *before* this question is raised—nay, more, until it is *settled?* Again, I claim that, in order to discuss the subject of *gleet* intelligently, the subject of *urethral stricture* must *first* be considered.

I have stated it as my opinion that "chronic urethral discharges are, *as a rule*, dependent upon urethral strictures for their *continuance*," whether these strictures be the product of a gonorrhœal inflammation in the first instance, or the result of inflammation of other origin.

It is not likely that there will be any important disagreement as to the manner in which strictures are formed, but, I do not quite agree with Prof. Sands, nor with the authorities he quotes, in ascribing the *first* place in the causation of stricture to *gonorrhœa.* I recognize the fact that it is most often brought to our notice through the occurrence and persistence of this disease, and that all preëxisting strictures, or thickenings, or irritations, of the urethral mucous membrane, are increased and intensified by it.

I would like, for a moment, to call your attention to some of the other—the *non-specific*—causes of urethral inflammation and stricture.

Sir Henry Thompson (whose views on so many points are in complete accord with those of Prof. Sands), in his work on " Stricture of the Urethra " (second English edition, page 114), headed " *Causes of Urethritis and thus of Permanent Stricture*," says: " Urine may possess an irritating quality from the predominance of an acid or an alkali in it; a persistence of either of these conditions must be recognized as one of the undoubted causes of organic stricture. Thus," he says, " Sir Benjamin Brodie states that alkaline urine is more likely to produce the disease (stricture) than that which is acid, and that persons secreting the triple phosphate are almost sure to have stricture sooner or later." Mr. Liston says, in reference to attacks of acidity of urine, that " their continuance, or frequent occurrence, may lay the foundation of disease of the urethra." And further, Sir Henry Thompson says (ibid., page 115), " Excess of venery, protracted erections, and prolonged intercourse, are recognized causes of stricture." Lallemand, Ricord, Sir Everard Home, Acton, Gouley, Gross, and others, recognize *masturbation* as a cause of urethral stricture, and certainly if we can accept, with Sir Henry Thompson, excess of venery, etc., we cannot deny this influence to masturbation. I have myself seen several aggravated and undoubted cases which fully support this view; and, again, Sir Henry Thompson (ibid., page 117) says, " The influence of gout and rheumatism are undoubted causes of spasmodic stricture—these diatheses, therefore, predispose in this manner to the accession of organic stricture."

Not to pursue the causation of urethral stricture further, for fear of wearying you, I desire now to ask your attention to a few observations upon, and natural deductions from, the foregoing citations from our most valued authorities.

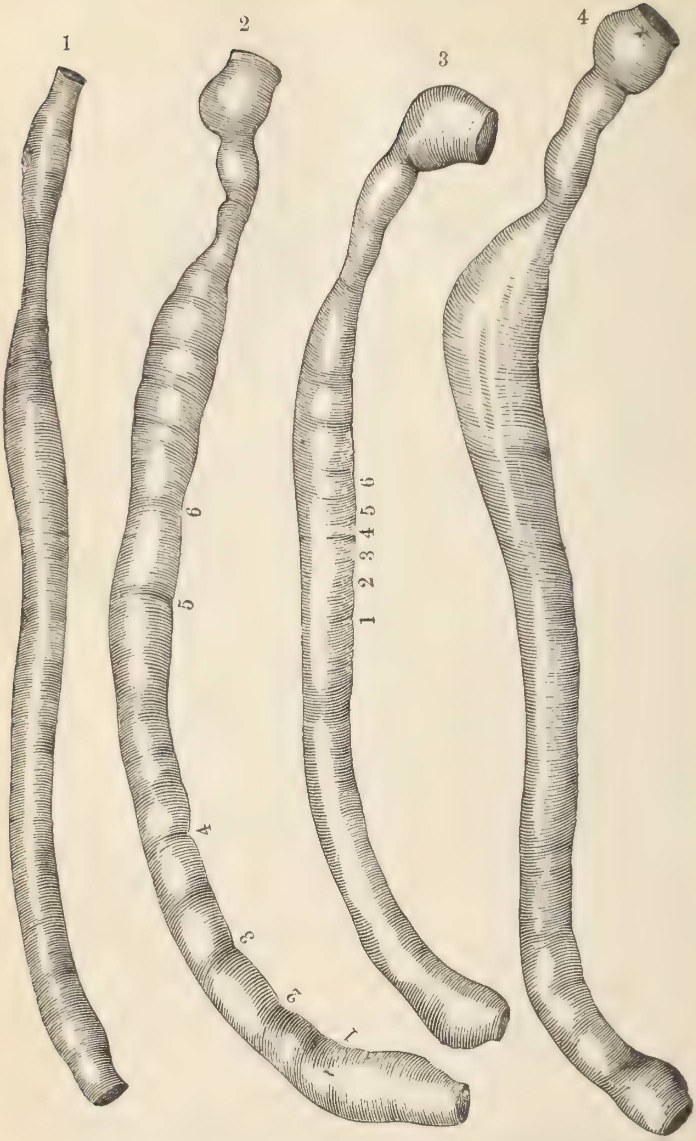
In the first place, the influence of vitiated urinary secretions, excess of venery, prolonged erections, and protracted sexual intercourse, is distinctly recognized and insisted on, as a cause of organic urethral stricture, and this, too, by authorities whose facilities for urethral examination were most imperfect, and hence could only detect, positively, the more advanced stages of stricture. It is but just, it seems to me, to infer that, in very many cases examined by them when symptoms of stricture were present, no stricture was detected. The method now pursued by Prof. Sands, Sir Henry Thompson, and many other less enlightened surgeons, would signally fail in detecting the earlier invasions of stricture in any urethra of a capacity of above twenty-five millimetres in circumference.

Now, when we come to consider the proportion of men who, at some time in their lives, have suffered from acrid urinary secretions (from a gouty or rheumatic diathesis, and various other causes) from excessive venery, masturbation, etc., does it seem to you necessary to insist upon it that every subject of a gonorrhœa had a previously normal condition of his urethra?

Urethral stricture is recognized by Prof. Sands as *a cause* of gleet. What amount of contraction is, then, necessary to constitute a stricture capable of producing or prolonging a gleet? By the admirable casts of the urethra, which he has presented in his paper, he has, in four specimens, demonstrated a difference in the urethra of different individuals. These casts (carefully enlarged drawings of which I now present to you) will form an interesting basis for study in reference to what may be said to constitute a stricture.

In cast No. 1, the walls of the canal are seen to be smooth and quite free from indentations. No. 4 is almost equally so, except within an inch or so from the meatus, where two or three slight indentations are seen. No. 3 shows four or five wrinkles occurring at a point coincident, or nearly so, with the locality of the peno-scrotal angle during life, and correspond with the thickened folds of mucous membrane which are so commonly found at this point in examinations with the urethra-meter. No. 2 presents not less than *six distinct contractions* between the meatus and the bulb. It must be borne in mind that a force, of no insignificant character, has been used in the distention of the urethræ from which these casts were taken; and it may, I think, be reasonably presumed that any *accidental* wrinkles would have been straightened out; in short, that nothing but permanent organic contractions would have left their imprint upon the plaster cast.

Fig. 1.



Drawings of Urethral Casts presented by Prof. Sands on page 16 of his paper.

Whether these can be called strictures, or not, will depend very much upon what degree of contraction is considered worthy to be called stricture.

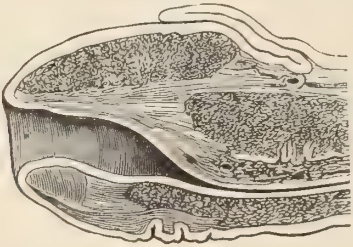
The practical point which this condition suggests, however, is that, whether we call these points strictures, or contractions, or wrinkles, they are certainly capable of interfering with the smooth and easy passage of urine; that they would furnish admirable points of lodgment for the solid constituents of the urine during an acid or an alkaline dyscrasia—very slight, it may be acknowledged, but very marked when compared with the smooth and regular outline of No. 1. Now, if we can suppose two urethræ, which shall be the counterparts of those from which casts No. 1 and No. 2 were taken, to be invaded by a gonorrhœal inflammation—which of them would, all other conditions being equal, escape with least damage—in which would a gonorrhœa be the least severe; which would be least likely to suffer with subsequent gleet? The urethræ which are represented by these casts were said to have been free from any evidences of disease: when, however, we recall the statement of *Foerster*, quoted by Prof. Sands, on page 7 of his paper, viz., that "blennorrhœa sometimes lasts a very long time without causing any material alteration of the urethral mucous membrane," we may reasonably question the inference that Nos. 2 and 3 were free from disease, while we have ocular proof of the presence of conditions which would favor a contrary conclusion. If No. 2 can be accepted as representing a perfectly normal condition, the smooth and unwrinkled surface of No. 1 must then be acknowledged to vary from it in a very noticeable degree. Should it be claimed that the smoothness of No. 1 is accounted for by the less force used in making the injection, we will transfer the comparison to Nos. 3 and 4, which are sufficiently free from contractions to present a striking contrast with No. 2, although in case of these, as nearly as possible, the same force was applied.

Convinced, as I am, that *complete* freedom from obstruction in the muscular structure of the urethra is essential to the perfect performance of the act of micturition; that *complete* absence of points of friction is necessary to secure the greatest immunity from local and reflex disease, I should no more feel justified in presenting cast or cut of urethra No. 2 as typifying a normal urethra, than I would present a neighboring orifice to you, as normal, when surrounded by the shriveled remains of half a dozen hæmorrhoids.

These casts were claimed to show, among other things, the incorrectness of my views, in regard to the absence, in a perfectly normal urethra, of that boat-shaped dilatation which is described by authors as occupying the first inch of the urethra, and termed the fossa navicularis. Four specimens are rather few to decide a disputed anatomical point, but, as far as they go, they prove the *correctness* of my position. It is entirely absent in No. 1. In No. 2, which is rich in dilatations and contractions, and with a meatus eleven millimetres smaller than any other part of the canal, it is present. In Nos. 3 and 4, if by courtesy it can be said to be present at all, it is within a quarter of an inch of a contracted meatus, and is merely a pouch-like dilatation, which I have always recognized as associated with a contracted meatus, and have never seen in connection with a meatus of the normal size.

In his discussion of this point, Prof. Sands states that I misquoted *Henle* in reproducing his representation of a frozen section ("Anatomie des Menschen," vol. ii., p. 424). It was the *illustration*, showing that the *normal* meatus corresponded in size with the urethra behind it, which I quoted—the transcript from a natural frozen section; *which proves my claim*—and *not* his subsequent reiteration of a conventional idea. He has *thrice* presented this plate as a transcript from a normal

FIG. 2.



Henle's Vertical Section of the Anterior Portion of the Penis.

condition of the penis at this point. The same drawing has been represented, by Drs. Van Buren and Keyes, as a normal condition under the title of "*Vertical Section through Glans and Fossa Navicularis.*"[1] It corresponds completely with my own numerous observations, on the living subject as well as on the cadaver. What Henle *says* is greatly weakened if not made wholly valueless, when his own transcripts from nature, as well as the careful observations of others, contradict his statements.

In speaking of examinations in the living subject, Prof. Sands says (p. 20), "In practice, we find, in the size of the meatus, a rough test for the calibre of the urethra." This has long been taught by authorities, and has been adopted by many surgeons as a guide for estimating the calibre of the deeper urethra. The idea may almost be said to be *prehistoric*, and possibly occurred to Adam on his first urination. If our great progenitor could have been examined with a bulbous sound, I doubt not that *his* meatus *would* have been found to correspond completely with the canal behind it, and hence, at that period (if man may then be believed to have been in physical perfection) the meatus would have proved an exact guide to the normal calibre of the urethra. When I now meet with such a case, I consider it the highest normal type of meatus. But, since then, indiscretions and other irregularities have crept into the world; and now, after six or more thousand years, the result is, that the meatus, among other things, has varied from its original type, so that, at the present day, if we accept the size of the meatus as a rough guide to the size of the urethra, we shall find it a very rough guide indeed. The fact is, that the meatus can be shown to be perfectly *inconstant* in its relations to the urethral calibre, and that in not more than one case in ten does it occur that the size of the meatus is a reliable test of the size of the urethra. In the examination of one hundred living subjects with the urethra-meter—

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[1] "Genito-Urinary Diseases, with Syphilis," page 30.

1	was	13	mm. cir.	3	were	25½	mm. cir.
3	were	15	"	4	"	26	"
1	was	16	"	5	"	27	"
3	were	18	"	3	"	27½	"
2	"	17	"	2	"	28	"
3	"	19	"	1	was	28½	"
1	was	19½	"	5	were	29	"
3	were	20	"	3	"	30	"
2	"	20½	"	5	"	32	"
2	"	21	"	4	"	33	"
5	"	22	"	2	"	33½	"
1	was	23	"	2	"	34	"
1	"	23½	"	1	was	37½	"
7	were	24	"	——		——	
1	was	24½	"	100		24.72	
17	were	25	"				

Average size in one hundred cases, 24.72.

In no case was the urethra, in the one hundred cases, below a calibre of 26 millimetres—ranging from this to 39—the average being 32.95. I think, then, that we are forced to conclude that the size of the *meatus urinarius externus* is not in any sense or degree a guide to the urethral calibre.

It is worthy of remark that, in the one hundred examinations referred to, notwithstanding the very great disproportion between the size of the meatus and the calibre of the spongy urethra, no marked trouble on that account was noted. These were, however, cases which claimed to be free from inflammatory antecedents. It is probably the fact that, as long as the meatus escapes inflammatory action, it does not become a source of trouble on account of its diminutive proportions. We may have a meatus from the size of a mere pin-hole to the full size which corresponds with the calibre of the urethra behind it. None can, perhaps, be claimed to be *abnormal*, as long as the functions of the part are well performed; and hence, in the presence of so great variations, it might be difficult to fix upon the *highest normal type* of the meatus urinarius. We find, however, that various and grave difficulties and diseases are occasionally associated with a genito-urinary apparatus, where the meatus is not of the full size of the canal behind it, and that such difficulties are promptly relieved by a surgical procedure which permanently enlarges the meatus to that size. The fact that such difficulties do not occur, when the meatus is of the full size of the canal immediately behind it, gives additional weight to the assumption. That condition, then, of these parts which insures the most complete functional integrity, and is least liable to become a source or seat of disease, and which is also least liable to induce, aggravate, or prolong disease in the contiguous parts, may, I think, be safely and appropriately accepted as representing the *highest normal type.* Now, by observation of the one hundred cases reported, the meatus will be found to correspond with the canal behind it, in *ten* cases, while *not one* exceeds this limit. Besides this, it can be most positively proved that contracted meatus prolongs and intensifies gonorrhœa, produces gleet, and is the source of varied and grave reflex irritations.

Profs. Van Buren and Keyes (p. 92) boldly state that "an individual with an average-sized penis, whose meatus will take only eight or nine (fourteen to fifteen f.), has *stricture* (congenital) of the meatus, although he never may suffer any inconvenience therefrom." Prof. Gouley (p. 103, "Diseases of the Urinary Organs") states that the proportion of strictures in this region, as compared to the entire number he has seen, is at least 30 per cent. Thus it stands : individuals *may* have a meatus, strictured more or less, and never suffer any inconvenience therefrom ; again, this condition *may* give rise to grave trouble. Why this apparent difference? Simply, as I apprehend, that when the muscular structure of the meatus, and the urethra behind it, is in perfect condition, it is enabled to empty the urethra completely after urination. Let inflammatory action be set up in this locality, as may occur from extension of an infantile or an adult balanitis, or from gonorrhœa, or from any other cause, and a plastic exudation results, which, becoming organized, disables the urethral muscular structure, and it is no longer able to act efficiently in expelling the last drops of urine; they are retained, a dribbling results, and is the unvarying sign that such an accident has occurred. It is from this cause that the discharge from a gonorrhœa is retained, aggravating and prolonging the disease. Now, the only rational remedy, in this class of cases, is to relieve the obstruction; we cannot restore the disabled muscular structure, but we can relieve the obstruction, mechanically, by making the orifice to correspond with the size of the canal behind it, and thus enable the urethra to clear itself of its irritating secretions.

But Prof. Sands says: "The practice of slitting up the meatus is injurious and irrational," that "the normal meatus is narrow, and its size favors the projection of the stream of urine during micturition." It is not the *normal* meatus that requires any slitting, or any other operation; it is the division of the *abnormal* meatus—disabled through antecedent inflammatory action—which a *rational* treatment demands. I venture the assertion that thousands of cases of gleet exist to-day, which have been treated by copaiba, and constitutional remedies, and injections varied and frequent, and even by full-sized bougies, for years, and vainly, which this comparatively simple operation (of removing the obstacle to the complete emptying of the urethra) would promptly accomplish, besides affording immunity from recurrence, except from a fresh contagion.

But gleet, troublesome as it is, is by no means the only untoward result possible from a contracted meatus. This point is admitted by physiologists to be a sort of telegraphic depot for the whole genito-urinary system Nor is it the genito-urinary system alone which may suffer from irritations of this locality. You have but to recall the fact, that a lascivious thought will cause a sensation at this point, and that slight irritation here will induce the sensuous thought. Depression of spirits, especially in youth; incontinence of urine; pain on ejaculation; neuralgias of the testicles, over the pubis, down the thighs, and even to the soles of the feet; spasmodic stricture, with or without retention of urine; prostatic irritation and enlargement; inflammation of the bladder and testicle—are each capable of being produced by this condition, in certain instances, as proved by the prompt disappearance of these troubles (often ineffectually treated by other and various means) through a free division of a contracted meatus. My paper on "Reflex Irritations throughout the Genito-Urinary

Tract," read before the New York Academy of Medicine in February, 1874, adduces no less than nineteen representative cases of this sort, with all the particulars of antecedent and subsequent conditions. In the London *Lancet* of January 29, 1876, Mr. Furneaux Jordan, F. R. C. S., Professor of Surgery, etc., of Birmingham, England, in speaking of the possible influence of a contracted meatus, writes thus: "I not unfrequently meet with the cause and its results. In boys a common result is cystitis, simulating stone in the bladder. Boys, however, often escape notable trouble; as men they are not let off so easily. With the cares, indigestion, gout (disguised or open), and other ailments, which increase the acidity of the urine, there come one or several of the results of stricture. One such effect is *urethritis*, which, by continuous extension, may lead to *prostatitis*, or *cystitis*, or *epididymitis*. There are some," he says, "who under such circumstances would affirm that the urethral inflammation had been caused by contact with some noxious fluid. . . . I will not," says Prof. Jordon, "here discuss the merits or demerits of a policy of uniform incredulity. My answer is this: often in cases of diminutive meatus, the bladder is affected first, then the prostatic urethra; then perhaps the inflammation may extend along the vas deferens, setting up consecutive orchitis, and from first to last there is no urethral discharge.[1] Frequency of *micturition; supra-pubic pain; mucus* or *blood* in the urine; are, singly or combined, the subject of complaint. . . . A *diminutive orifice* aggravates and prolongs a *gonorrhœa* or gleet or *stricture* and their ordinary *sequelæ*. The treatment," he says, "which I adopt for a small meatus is an incision—the result in all cases—a large number—*successful*. The success is not always rapid, especially in old-standing cases of cystitis; but, sooner or later, relief follows."

Sir Henry Thompson says:[2] "I have given complete relief to distressing symptoms of very long continuance, the cause of which was not suspected, by dividing an external meatus which, nevertheless, admitted a No. 6 English catheter;" and he cites three cases when the very simple operation necessary had given complete relief to symptoms "which had long been regarded as of very obscure character." Now, if such troubles can be adduced as the possible effect of a contracted meatus, and such results can be shown by its division, can it be justly said that slitting a contracted meatus is *irrational?*

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[1] "Stricture of Urethra," second London edition, p. 249.

[2] Ibid.

Prof. Sands (quoting from one of my papers on "Stricture of the Urethra") says: "If a urethra present, the normal calibre of which is equal to a circumference of 30 millimetres, and only a 29 bulbous sound will pass, without detecting obstruction, then the urethra is not 'about right.' It is strictured to the extent of one millimetre, and can never be a healthy urethra while that stricture remains." Then he says, "Let us inquire if these statements can be verified; if so, we shall find established an important principle in the treatment of gleet." The question of the measurement of the urethral calibre, which is involved in the statement quoted, is one of so great importance, that I shall not apologize for entering upon it with some degree of minuteness. As a mechanical proposition, there is no room to doubt but that, if the canal, that is, the ante-bulbous urethra, is 30, and 29 only will pass without detecting obstruction, obstruction certainly exists. This, however, as I apprehend, is not the point in dispute, but it is as to whether this minute obstruction, in the first instance, if present, can be made out, and in the second, if made out, can it prove a cause of trouble. The first point, then, to consider is, What do we understand by the normal calibre of the urethra? In order to settle this, and to meet the objections which have been urged against my own views on this subject, I will present briefly the method and results of urethral measurements by accepted authorities. From the year 1854 to 1875, Sir Henry Thompson taught that, "when 8 or 9 of the English scale could be passed easily through a given urethra, no stricture could be said to exist." In one of his recent lectures delivered at the University College of London, November 18, 1875,[1] he says: "Simply take a flexible English gum-elastic bougie, well curved toward the point, with a blunt end, not larger, as a rule, than 10 or 11 of our scale (that is, nineteen or twenty millimetres in circumference), and pass it very gently

[1] Reported in the London *Lancet*, December 11, 1875.

and slowly into the bladder. If it goes easily, above all, if it is drawn out without being held, and slides out with perfect facility, take my word for it he has no stricture, and *quoad* obstruction, wants no use of instruments whatever." It will thus be seen that Sir Henry Thompson fails to recognize the varied capacity of the urethra in different individuals, and practically reduces all urethræ to a common and fixed standard. It will also be observed that, within the last year, he has raised this standard from "8 or 9 English" (17 and 18 F.), to "10 or 11" (19 and 20 F.), that is to say, *about two millimetres.* Why he has done so does not appear.

Now, Sir Henry Thompson distinctly states, that "in the living body the walls of the passage are closely applied to each other in a state of inaction, so that the diameter is only calculable when distention occurs from some cause . . . . Indeed," he says, "the question of the diameter of the urethra must be considered as resolving itself, to a certain extent, into *the measure of its capacity of being extended*, and this is of greater practical importance than the mere width of the mucous membrane, when slit up after death;"[1] and yet Sir Henry fixes the urethral limit at 10 or 11 English, without the least reference to these facts.

Prof. Sands says that "we have properly the *normal* calibre of the urethra, *when it is moderately distended by urine during normal* micturition," and, although he remarks, "we cannot estimate this with accuracy, *I believe that it is not very large.*" That is to say, it does not, in his estimation, make a calibre of more than twenty-five millimetres. He says, "Finally, passing sounds exceeding *twenty-five* millimetres *is very rarely necessary, either for the diagnosis or treatment of strictures of the urethra.*" Prof. Sands thus virtually fixes the urethral calibre at *twenty-five millimetres.* Twenty-five millimetres is equal to 14 of the English scale. We are not informed why Sir Henry Thompson first fixed the urethra limit at "8 or 9," nor why he subsequently granted an extension to "10 or 11;" nor yet why Prof. Sands is willing to allow a calibre of 14. There is no evidence to show that these estimates are based upon any well-ascertained facts bearing upon this point. Profs. Van Buren and Keyes say (page 28 of their excellent work on venereal diseases,[1] and in italics), "*A fair, average, well-formed urethra* measures about *three-eighths of an inch in diameter;*" that is to say, thirty millimetres in circumference. The French school (as represented by Dr. T. B. Curtis, of Boston, in his essay which won the Civiale prize in 1873, and has thus the stamp of approval by the French Academy) says, "*The size of the human male adult urethra is seven millimetres in diameter,*" or 21 of the French scale.

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[1] "Stricture of the Urethra," Thompson, second London edition, p. 6.

The late Mr. Guthrie, so much appreciated as a surgical authority, both in Great Britain and America, says, "The urethra varies so much in different people, that it is scarcely worth inquiring into, particularly as the passage of instruments is always regulated by the size of the orifice; " . . . . but, as to its *positive* size, he says: "I have a solid bougie which is rather more than half an inch (twelve and a half millimetres) in diameter. I had it made for one gentleman in particular, and it passed with perfect ease through the whole passage . . . . Very few urethras," he further remarks, "will admit a sound of more than 12 to 16."

In view, then, of this apparent want of harmony (not to say definiteness), in arriving at a practical estimate of the normal urethral calibre, we must, I think, come to the conclusion that the authorities quoted must have taken *the size of the meatus*, *the volume of the stream*, the *results of post-mortem examinations*, and the *experiments on the extensibility of mucous membrane*, as a basis, and have struck a general average as to what ought, in their opinion, to constitute a normal urethral calibre. In summing up these independent, individual estimates, we find them as follows:

Sir Henry Thompson (10 to 11 E.) up to 19 or	20	millimetres.
The French school	21	"
Prof. Sands up to	25	"
Profs. Van Buren and Keyes	30	"
Mr. Guthrie up to *over ½-inch diameter* . about	40	"

Now, in a urethra of a calibre of 30, an instrument of 19 or 20 ("10 or 11" English) would pass a stricture of ten millimetres' value without discovering it; one of twenty-five millimetres would fail to appreciate a stricture of five millimetres' value or one-sixth of the entire calibre of the urethra; and should the normal calibre reach the size of 40, which it can be proved to do by Mr. Guthrie and myself, in rare cases, even an instrument of *thirty* millimetres in circumference would fail to detect a stricture involving *one-fourth* of the passage. It would, then, appear to be a matter of some importance, for a person suffering from symptoms of stricture, to ascertain the probable size of his own urethra before applying to a surgeon for aid; otherwise, he might apply to a disciple of the English school, who would not allow him a calibre of more than 19 or 20 ("10 or 11" English); or to a French surgeon, who would concede only 21; or to one who believes, with Prof. Sands, that "more than 25 is rarely necessary for the diagnosis or treatment of stricture;" for all these would certainly fail to detect, much less be able to appreciate, the extent of a stricture above their estimates, in a urethra which should reach the fair average of the normal urethra of our more generous American authority, to say nothing of the possibilities of a urethra of the size of about forty millimetres in circumference, cited by that grand old English surgeon, the late Mr. Guthrie.

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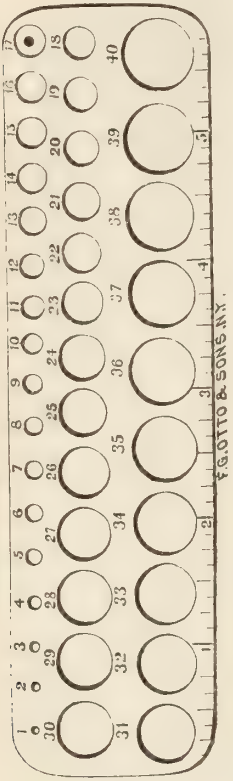
[1] "Genito-Urinary Diseases," etc., p. 28.

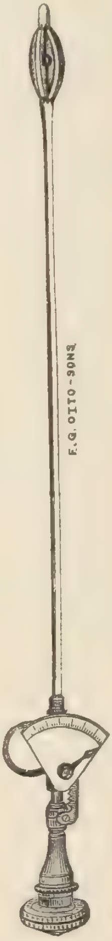
The conclusion is, then, forced upon us, that some method of arriving at an estimate of the normal urethral calibre must be adopted, which shall eliminate, as completely as possible, the element of individual opinion based upon generalities. The clear and practical view of Sir Henry Thompson, that "*the question of the diameter of the urethra must be considered as resolving itself into the measure of its capability of being distended*," furnishes us with the only rational basis for a true appreciation of the urethral calibre in different individuals. Through a very great number of experiments, upon subjects living and dead, during a period of more than four years, the possibility of arriving at correct and uniform measurements of the urethral canal, by means of this instrument, the *urethrameter* (which has already been described to you by Prof. Sands), has finally been demonstrated. By means of this it has been found possible to determine (and with scarcely more discomfort than would result from the introduction of an ordinary sound or bougie) the *limit* of easy distention, and thus of *normal calibre* of urethræ, within one or two millimetres in almost every case. In a great proportion of one hundred cases recently examined, this limit was defined *exactly;* and this without regard to the contractions of the meatus, or the presence of strictures above 13 F., which is the size of the closed instrument. My examinations with the urethra-meter

FIG. 3.



URETHRAL SCALE. From 1 to 40 mm. circumference.

FIG. 4.



THE URETHRA-METER.

have been, from the first, conducted with an entire knowledge and appreciation of the physiology and histology of the penis and urethra, as taught by authorities. It was fully recognized that the calibre of the urethra varied, anatomically, in different parts. The instrument was introduced, closed, to the bulbo-membranous junction, and then expanded slowly, until a feeling of *slight fullness* was experienced *by the patient.* If; *then*, it was *easily* and *painlessly* movable, it was drawn gently forward, and, if no positive obstruction was met, the urethra was considered free from stricture. If, however, it was arrested at any point, the instrument was turned down until it could pass, and the amount of obstruction was noted from the dial. If the holding was slight, and at a point of usual anatomical narrowing, it was not considered important, unless the instrument was distinctly resisted on being pushed back at such point.

After making a great number of examinations, I was led to appreciate an important difference in the calibre of different urethræ, and that an average standard was impossible. That while thirty millimetres was the full measure of one man's urethra, that of another would as freely admit a No. 40. solid sound through its entire length, and into the bladder.

Another point, and one which has attracted some, but not sufficient, attention, was that of the proportionate relation, which I came to observe, between the size of the urethra and the penis with which it was associated. After an extended experience on this point, I am prepared to state that this relation is constant, and is about 1 to 3½; in a penis of three inches circumference the urethra would be 30, 3¼ 32, 3½ 34, 3¾ 36, 4 38, 4¼ to 4½ 40; and that an estimate of calibre made on this basis is a valuable guide when the urethra-meter is not available. It must, however, be borne in mind that the circumstances under which examinations are made occasionally (though seldom) vary, and that some experience is necessary in order to recognize and appreciate the conditions which temporarily affect these relations.

Even late authorities state that a large penis may be associated with a small urethra, and that a small penis may accommodate a large urethra. This important statement will be proved untrue by the results of my examinations.

Out of the one hundred cases presented in the annexed tables,[1] the size of the urethra corresponded with the size of the penis, exactly in accordance with my claim, in thirty-nine cases:

Deviating	from it	1	millimetre,	36
"	"	2	millimetres,	17
"	"	3	"	2
"	"	4	"	1
"	"	5	"	3
"	"	6	"	1
"	"	7	"	1
				100

On page 21 of his paper, Prof. Sands relates *his* experiments with the urethra-meter. I am not surprised that, from his experience in twenty cases, he should arrive at conclusions on some points somewhat at variance with my own. The urethra-meter is an instrument which, like the *stethoscope*, requires a familiarity with its use, for which no anatomical knowledge, or dexterity in the use of other instruments, can fully compensate. The tactile skill which is required to appreciate the least amount of distention which urethral mucous membrane will bear, without damage, and yet shall give the assurance of its full expansion, will bear comparison with the appreciation of the *true respiratory murmur* in a chest-examination. Prof. Sands did find, however, that the instrument showed variations, in different localities of the urethra, corresponding with those which he had previously demonstrated on the dead subject. He says, "If the above facts can be verified, they prove indubitably that the assumption of an unvarying calibre for any urethra is unwarrantable; and it is plain that such an assumption must lead to the gravest errors in practice."

Now, I, for one, am sure that "these facts" *can be verified*, and I most cordially agree with Prof. Sands in his statement, as to the error of considering the urethra of unvarying calibre, as well as in regard to probable consequences of such an error.

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[1] The tables referred to were necessarily omitted for want of room.—Ed.

This is *the* error which is practically made by those who estimate the calibre of the urethra by the size of a bougie, and *not* by any one who makes an intelligent use of the urethra-meter. Prof. Sands has misapprehended me when he infers that I am accustomed to take the calibre of the bulbous portion of the urethra as a *measure* of what all parts of the urethra in front of this portion " ought to be."

The passage quoted from my article on gleet, etc., from which this conclusion is drawn, is as follows: " At this point (the bulbo-membranous junction) the bulbous portion of the instrument (the urethra-meter) is to be expanded by means of a screw at the handle, until a *feeling of fullness* is experienced, when, if there is no stricture at the point of trial, the hand on the dial-plate will indicate, *with sufficient certainty*, the normal calibre of the urethra under examination."[1] The *feeling of fullness* spoken of, referred, in my mind, to the *sensation* of the *patient;* and this I found was experienced, as a rule, before the true capacity of the canal, at that point, was reached; from the extreme sensitiveness which exists in some cases, the sensation of the patient affords no reliable guide in ascertaining the calibre of the ante-bulbous portion, with the urethra-meter. This abnormal sensitiveness is rarely present at the bulb, and thus the instrument, raised to a point occasioning a feeling of fullness to the patient (and not one of arrest to the operator) indicated, " with sufficient certainty," the calibre of the antebulbous urethra, and not the size of the bulbous urethra, which authorities state, and I then fully believed was, as a rule, much larger.

My meaning was perhaps not as clearly expressed as it should have been, but the errors which might arise from the impression that the bulbous and antebulbous portions are of the same size are perhaps not so great as Prof. Sands intimates, or as I myself should have premised, before making my recent urethral measurements of one hundred cases of supposed normal urethræ.

In these, the measured difference between the bulbous urethra and the part anterior to it was—

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[1] " On Gleet and its Relations to Urethral Stricture, American Clinical Lectures," p. 253, by F. N. Otis, M. D.

In	35	cases	1	millimetre.[1]
“	21	“	2	millimetres.
“	18	“	3	“
“	6	“	4	“
“	2	“	5	“
“	2	“	6	“
“	2	“	7	“
“	1	“	11	“
“	13	“		no difference.

The average difference in the one hundred cases was $2\frac{5}{100}$ millimetres, and the calibre of the antebulbous portion averaged 32.95.

In my previous report of one hundred cases, in a paper read before the State Medical Society in February, 1875, and which were examined with the view to detecting stricture, and not to ascertain the normal calibre, the average calibre was 31½. The difference of about two millimetres in the average of the first and second hundred cases may, I think, be accounted for by the more rigid, thorough, and methodical carrying out of the plan of measurement in the more recent examinatious. In this connection, as opposed to the traditional idea, it will be interesting to quote the opinion of that eminent English surgeon, the late Mr. Guthrie, who says:

“This bulbous portion of the urethra is said to be larger than the anterior part, but I do not believe that it is, although it may appear so.”

Perfect security against mistaking a normal narrowing for stricture may always be had, by examining *from before backward.* If the canal anterior to the contraction is of distinctly larger calibre, this localized contraction must be accepted as a stricture. I recognize the elements of doubt, as to the cause and nature of localized urethral contractions, in some cases, especially as *post-mortem* examinations often do not show any lesion of the mucous membrane over a point where stricture has been recognized during life. Various conditions, resulting from persistent irritation of mucous membrane, may obtain, which are capable of causing changes—possibly atrophy, with contraction of the trabecular structure, or obliteration of its meshes, and which might escape the observation of those who were looking only for cicatricial deposits. One thing is certain, that the subject has not yet received, from our microscopical experts, the attention its importance demands. The practical fact, however, remains, that whatever permanently constricts a localized portion of any urethra is practically a stricture, and capable of causing the effects of stricture, and is also amenable to the same method of treatment.

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[1] 1 millimetre equals $\frac{1}{25}$ of an inch.

The value of the examinations of one hundred cases, repeatedly referred to during the course of this paper, will be better appreciated by a knowledge of the circumstances under which they were made. The subjects of examination were, some in my own wards in Charity Hospital; others, through the courtesy of my colleagues, Drs. Keyes, Howe, Piffard, and Frankel, were selected from their wards. Quite a large proportion, fully one-half, were patients in Bellevue Hospital, kindly placed at my disposal by my friends Profs. Sands, Stephen Smith, and Dr. Erskine Mason.

The examinations were conducted by me, in the presence and with the assistance, on different occasions, of Drs. Stephen Smith, George A. Peters, F. J. Bumstead, H. G. Piffard, L. Bolton Bangs, W. T. Bull, and various members of the house-staff of Charity and Bellevue Hospitals. In the accompanying tables the names of each of the gentlemen, as far as possible, are associated with the cases examined or reviewed by them.

In three of the cases, a reëxamination was made after death; two cases, in the presence and with the assistance of Dr. Stephen Smith, Dr. A. Jacobi, and Dr. L. Bolton Bangs; and the third in the presence and with the assistance of Dr. Freeman J. Bumstead, Dr. George A. Peters, and Dr. Bolton Bangs. In the first two the reëxamination was found to accord completely with that made during life; in the third, the distensibility of the bulbous urethra was increased four millimetres; but the measurements in the anterior portion of the canal and size of the meatus remained the same. The measurement of the flaccid penis, in each case, was less by one-quarter of an inch than during life; but as, in the former, the measurement was made after the removal of the integument, it so far shows that the measurement of the flaccid penis during life does not differ greatly from a *post-mortem* measurement.

The results of examination were carefully noted by my friend and associate Dr. L. Bolton Bangs, whose sole office it was to record them. The tabulation, which is appended, was also made by him, solely, and has been subjected to no revision by any other person.

In regard to the case of fourteen strictures (reported by me to one of our medical societies, and subsequently published in the NEW YORK MEDICAL JOURNAL of April, 1874) referred to by Prof. Sands, I desire to protest against this grave accident to my patient being brought forward to discredit the results of my method of examining the urethra, especially so, as this warrants the inference that I am in the habit of discovering and operating upon strictures that do not exist. I am aware of the claim of Sir Henry Thompson that rarely more than three or four strictures occur in a single urethra. Pursuing the same general mode of examination, it is not difficult to appreciate the incredulity of Prof. Sands in regard to the existence of fourteen strictures in a single urethra. If a man thrust his hand into a fire, there will be no dispute but that he may have resulting as many scars as he has received burns. In the same way there can be no limit to the number of urethral scars, which become strictures, except by limiting the degree and continuance of the gonorrhœal, or other fire, which has inflicted the primary injury.

This drawing, which was presented, in company with the living subject, before the New York Medical Journal Association early in 1874, is a fairly correct diagram of the number, size, and locality of the fourteen strictures. They were made out by me, on several occasions, before the operation, and at the time of the operation these measurements were rehearsed and confirmed, under æther, by Dr. George A. Peters and Dr. Deforest Woodruff, who assisted me during the operation. The strictures were found, in a penis of three inches, to vary from twenty-two millimetres to one-third of a millimetre, and extended to 6½ inches, beyond which the urethra was practically impermeable. The perineal section was performed for the posterior strictures, and dilating urethrotomy for those anterior. The strictures were, with the exception of three bands deep in the perineal urethra, made out with the bulbous sounds; the latter were recognized in the passage of the Maisonneuve blade, by me, and distinctly appreciated by Drs. Peters and Woodruff.

Fig. 5.

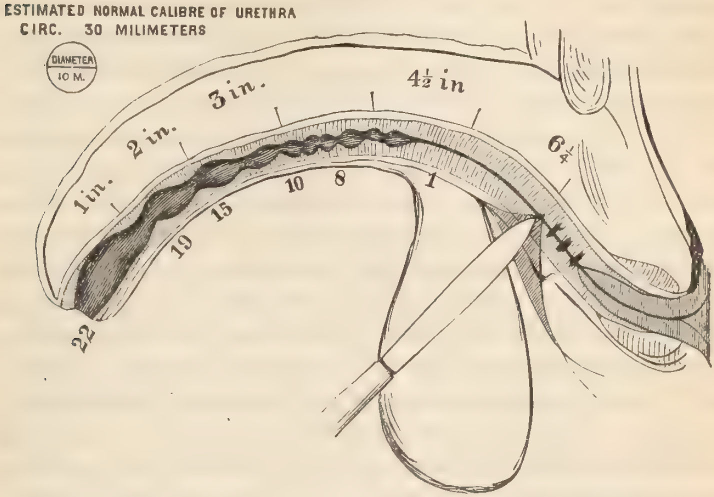

Diagram showing locality of the fourteen strictures in the case of W. C. H.

I was more than gratified to learn from so able a surgeon as Prof. Sands, from one who so thoroughly enjoys the confidence of the medical profession and of this community and country, that he thought so well of the operation of internal urethrotomy. "Some of the most gratifying results in modern surgical practice," says Prof. Sands, "have been achieved by this method. But," he continues, "I believe it applicable chiefly to the treatment of close strictures, and as an auxiliary to dilatation." I could have wished that he had accorded to this operation of internal urethrotomy, so highly commended, a broader scope. Prof. Sands announces himself as "a firm believer in gradual dilatation." For my own part, I can only consider gradual dilatation of stricture, except so far as it may be necessary to prepare the way for urethrotomy, in the light of a temporary expedient, and would use it only as I would temporize with a vesical calculus, with demulcents and sedatives, when the condition of the patient was such as to forbid the use of the scalpel or the lithotrite. I fully recognize the responsibility of so pronounced an opinion on this important matter, and I trust that, during the discussion which is to follow, some sound reasons will be adduced to show why *urethrotomy* should be confined to grave and close strictures; why a resilient urethral obstruction should be made the subject of oft-repeated stretchings—never without risk, and perhaps for a lifetime—instead of the prompt, rational, and what appears to me the more surgical treatment by *division.* Is it his fault, or that of his surgeon, that the subject of a gleet is so often made to pay a wearying tribute to one member of our profession after another, until at last he drops into the clutches of that class which Sir Henry Thompson so graphically describes as "hanging on the outskirts of our honorable profession," who will extort his last dollar in exchange for a placebo? I believe it can be proved, that every gleet is the result of stricture, and that it is a true and safe economy to search it out in its inception—to divide it, and thus promptly restore the urethral calibre to its integrity, and before the damage it may occasion, has implicated tissues and organs to an extent which may imperil life. Every stricture is a mortgage bearing compound interest, and the wise man will promptly pay it off. Every gleet is a call for payment. You may for the time, with syringe and bougie, drive off this implacable, persistent dun, but he will return, in one guise or another, until the debt is paid, or the property is forfeit.

Art. II.—*The Proper Construction, Care, and Uses of the Galvano-Cautery Apparatus.*[1] By Henry G. Piffard, M. D., Surgeon to Charity Hospital, Professor of Dermatology in the University of the City of New York, etc.

The great value of the galvano-cautery as a surgical appliance is admitted by all who are familiar with its use. Its employment, however, has been, until within a few years, quite restricted, owing to the inconveniences attending the management of the apparatus in vogue. The earlier instruments were large, unportable,[1] troublesome to arrange for use, and when in action were accompanied with the evolution of disagreeable and noxious fumes. How these difficulties were to be overcome was a problem which long waited a solution. The efforts of Stöhrer, Trouvé, and others, in Europe, met with a certain measure of success, inasmuch as their instruments were easy to arrange, and were unaccompanied with acid fumes. The size of the batteries, however, precluded their frequent use. This narrowed down the question to the possibility of obtaining an instrument capable of meeting the ordinary demands of the surgeon, and which, at the same time, should be strictly portable.

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[1] Read before the New York Medical Journal Association, March 10, 1876

Dr. John Byrne, an American physician, was the first to devise an apparatus fulfilling these requirements, by the construction of the instrument which bears his name. During the past year Dr. B. F. Dawson has designed another cautery, smaller in size than Byrne's, which also performs in an admirable manner. These two batteries being of different sizes and construction, a comparison of the specific efficiency of each is attended with some difficulty, and the question as to which of the two is constructed upon the better principles can hardly at present be answered without more elaborate comparative tests than have as yet been made. Too much credit cannot be accorded to the gentlemen for the results which their experiments have produced. Have these batteries, however, reached the limits of efficiency? In other words, is it possible to construct an apparatus which shall be still more powerful without exceeding them in size, and which shall not be much more expensive? This question, I believe, can be answered in the affirmative, and that, too, without the involvement of any *new* principles, but simply by the more thorough utilization of old. The very unsatisfactory performance of a large Trouvé battery, which I had obtained during the past year from Paris, led me to desire something more compact and reliable. An examination of the Dawson battery satisfied me in both these respects, but it was not clear that this particular construction possessed the greatest attainable power in proportion to size. It did not appear that every element of power had been utilized to the fullest extent. Before adverting to the peculiarities of its construction, I trust I may be pardoned if I ask attention to the qualities which it is desirable that a cautery battery should possess, and also to some of the elementary principles of galvanism. A battery constructed for the purposes under consideration should be in the highest degree powerful, reliable, durable, convenient, and compact, so far as these several features are mutually compatible. It would be easy to construct an instrument in which either of these qualities is very highly developed, but it would be at the expense of the others, and would result in an apparatus which might be practically useless. The problem is, to combine them in a way that will enable us to obtain the greatest efficiency for the purposes designed. A galvano-cautery apparatus consists of several parts, to wit, the battery, the connections, the pole-cords, the handle or holder for the platinum instruments, and the instruments themselves. These different parts I will refer to *seriatim.*

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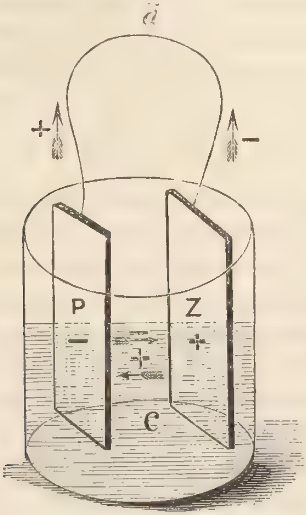
[1] By a *portable* battery I here mean one that can be easily carried in the hand, and does not require the aid of a vehicle for its transportation from the office of the surgeon to the residence of a patient.

The Battery.—Every galvanic battery adapted to cauterizing purposes consists of four essential parts, namely, a positive and a negative electrode, an exciting fluid or fluids, and a vessel or vessels for confining them. The simplest manner of arranging them is shown in Fig. 1.

The positive electrode in almost universal use is zinc, while the negative commonly employed is either carbon or platinum (preferably the latter, except upon the score of expense). In an arrangement like the above a current of positive electricity commences at the inner surface of the zinc, traverses the liquid in the direction of the + arrow, traverses the plate *P*, and thence through the wire to the zinc again, continuing its course in the same manner so long as the connections remain unbroken, and it meets with no other obstacle. A negative current generated at the inner surface of the platinum plate pursues an opposite direction, as indicated by the — arrow. The positive current alone concerns us at present.

The strength of this current is expressed by the formula $C = \frac{E}{R}$, in which C represents the utilizable energy of the current, and which is equal to E the electromotor power or initial energy of current, divided by R, which is the resistance or obstacle to its free circulation.

FIG. 1.



GALVANIC BATTERY: *Z*, Zinc Plate; *P*, Platinum Plate; *c*, Exciting Fluid which forms an Inside Connection; *d*, Wire forming an Outside Connection.

Our object in the construction of an efficient battery is, to give C the largest possible value, and at the same time to restrict the size of the apparatus. This may of course be effected by increasing E, or by diminishing R, or by both. The plates being zinc and platinum, E will be increased by enlarging their surface, or by employing an exciting fluid of great activity. Before attempting to reduce R, we must first consider its nature, which is easily understood if we remember—

1. *That every body, solid or fluid, which is capable of acting as a conductor of electricity, offers at the same time a certain amount of resistance to its passage.* Different bodies vary in this respect, silver being the body which offers the least resistance, and water being one which offers a very great deal.

2. *The resistance increases* (other things being equal) *in*

proportion to the length of the conductor; that is, a wire two feet in length offers twice as much resistance as one half that length.

3. *The resistance increases with the diminution of the area of a cross-section of the conductor.*

In every battery circuit resistance is of course encountered both within the battery, which is termed the internal resistance and is represented by R,[1] and outside of it in the wire connecting the plates. This latter is called the external resistance, and is represented by r, which changes our first formula into

$$C = \frac{E}{R + r}$$

For the present we will disregard r, and suppose that the plates, having been dipped into a vessel containing a suitable exciting fluid, are connected by the wire d (Fig. 1). At the instant the circuit is completed an energetic current is set in motion, and we find a liberation of oxygen at the positive, and of hydrogen at the negative electrodes. In a few moments, however, the current diminishes in force, and continues to diminish until it is almost inappreciable. This is due in part to a sudden increase in the resistance developed within the battery, and which soon becomes so great as to present a serious obstacle to the passage of the current. It is the result of several causes. The oxygen at the positive plate combines with the zinc, and this in turn with the acid present, and the fluid nearest the plate soon becomes saturated with a salt of zinc. Now, if the specific resistance of a 10 per cent. solution of sulphuric acid be represented by 1, the resistance of such a solution saturated with sulphate of zinc is about 17 (Callaud). The too rapid oxidation of the zinc must, therefore, be prevented. This may be effected by coating the surface of the plate with mercury, or what is called amalgamating the zinc. This keeps the oxidizing action within due bounds. The hydrogen which appears at the negative plate is of course unable to combine with the platinum, but adheres to its surface in the form of little bubbles. As gases are even poorer conductors than fluids, these bubbles introduce an additional element of resistance to the passage of the current. A third cause of the stoppage of action arises from the fact that the layer of saturated fluid lying next the zinc loses its electro-genetic power. The battery thus brought to a standstill may yet, however, be revived, and, as the causes are understood, a remedy is easily found. It consists in simply removing the saturated fluid from the immediate neighborhood of the zinc, and the hydrogen bubbles from the platinum, and in bringing fresh fluid in contact with them, and restoring to *R* the value it possessed at the commencement of the operation. This is effected by mechanical agitation. For this purpose a great number of contrivances, which need not at present be mentioned, have been devised. A battery thus restored to activity will continue to give a current until the entire electrogenetic power of the fluid has been exhausted, or until the zinc has been completely consumed by oxidation. As it takes a great deal of fluid to destroy a very little zinc, the former will, in a new battery, be expended first and must be renewed when it is desired to prolong the action.

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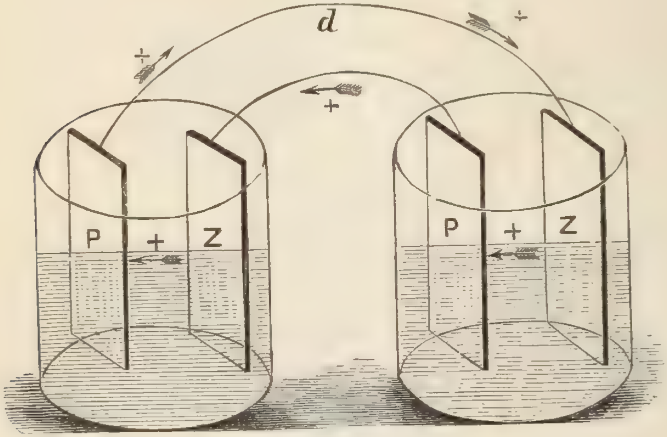
[1] The internal resistance R is mainly due to the resistance offered by the exciting fluid, and will vary with its composition and the breadth of the stratum which intervenes between the plates.

Let us now consider the external resistance. Whatever may be the length or thickness of the connecting wire, or the material of which it is composed, a certain amount of resistance will be encountered, and certain changes in the condition of the wire will occur. The one which particularly concerns us is the evolution of heat, and this increases in direct ratio with the resistance encountered. It is this conversion of electricity into heat which places at our disposal a valuable surgical appliance.

It is frequently desirable to employ two batteries instead of the single one just alluded to, arranged in such a manner that the zinc electrode of one is connected with the platinum of the other, and the circuit completed by joining the free poles of the two batteries together, as in Fig. 2.

This would give us $C = \frac{2\,E}{2\,R} = \frac{E}{R}$ as before; but, if the wire *d* is the same as used in the first instance, we will have upon analyzing R the formula $C = \frac{2E}{2R + r}$ instead of $C = \frac{E}{R + r}$ as in the single battery, which is a manifest gain in the value of C.

Fig. 2.



The energy of the utilizable current C is the result of two elements or qualities which always coexist, but which vary in their relations to each other according to circumstances. These two qualities are known respectively as *quantity* or *volume*, and *intensity* or *tension*.[1]

By *volume* we mean the amount of electricity generated in the battery, and by *tension* its capacity for overcoming resistance. The volume is increased by enlarging the surfaces of the plates, the tension by increasing the number of cells, arranged as in Fig. 2. The volume contributes mainly to the heating of the wire, while the tension enables the resistance to be overcome and the circuit to be established; and experience has shown that a current of large volume but low tension will heat a short, coarse wire; but, if a greater length of the same wire is to be heated, the tension must be increased by the addition of cells. On the other hand, a current of small volume but great tension will fail to heat a coarse wire, but may heat a considerable length of fine wire.

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[1] The word "intensity" is used by some writers in a different meaning, and is made synonymous with C.

With these principles and facts understood, the construction of an efficient cautery apparatus is simply a question of detail; but it is just this matter of detail upon which success or failure will depend.

The first point to be considered is the choice of the materials for the electrodes. Pure rolled zinc is the most convenient and best substance at our command to use as the positive plate. To make it a useful electrode, however, it is necessary that it should be amalgamated. This may be effected in several ways. The usual procedure is to dip the zinc plate in dilute sulphuric acid and then in mercury, in which it is left for a fraction of a minute. After it is taken out the excess of mercury is allowed to drain off, or may be rubbed off with the finger or a piece of cloth. A much better way, however, is to employ Moncel's amalgamating solution, which is prepared as follows:

Mercury	100 grammes,
Aqua regia (1 part nitric and 3 parts hydrochloric)	500 grammes.

Dissolve the mercury with heat, and when cold add hydrochloric acid 500 grammes.

The plate is dipped for a moment in the solution, removed and thoroughly rubbed under running water. The advantages of this method of amalgamating far outbalance the trouble of making the solution, as a plate thus prepared will remain in good working order very much longer than if amalgamated in the ordinary manner.

For the negative electrode the choice lies between carbon and platinum. In Byrne's battery the former is used, in Dawson's the latter. I think the platinum is to be preferred, for, although more costly than carbon, it is more durable and takes up less space in the battery. A zinc-platinum battery, with ordinary care, should be in as good condition (except as to waste of zinc), after being used a hundred times, as when new. A zinc-carbon battery will certainly not be, even with extraordinary care.

The distance which separates the plates is a matter of great importance, since the nearer the electrodes approach each other the less (*cæteris paribus*) will be the internal resistance, and by lessening R we increase C. They should not, however, be brought too close, as there must be some room to permit of agitation of the fluid. In the Dawson battery circulation of the fluid is accomplished by means of a solid agitator, which lies and is moved up and down between the electrodes.[1] This, of course, makes it necessary that they should be a certain distance apart. Their actual distance is about thirteen millimetres ($\frac{1}{2}''$). In Byrne's battery, agitated by air, the plates are much closer, which is a manifest advantage over the other arrangement, provided the air agitation is as efficient as the patented one. To determine this point, I arranged two cells, with the electrodes the same distance apart in both, and in every respect alike, except that to one I adapted a Dawson agitator and to the other an air-injector, arranged for me by Mr. Boissier.[2] After careful experiment, Mr. Boissier and myself were unable to perceive any material difference in the effects produced by the different kinds of agitation. This, of course, induced me to place my electrodes closer together than Dawson's, in order to reduce R, an arrangement which constitutes one of the strong points of the Byrne battery. The distance between the plates which I finally adopted is nine millimetres ($\frac{5}{16}''$). Dawson's plates are a little wider than mine, but the ratio of total platinum surface is about six in the former to ten in the latter.

The *agitator* consists of a small tube at the end of the cell, the lower portion perforated with holes. A cross-tube passes to the tube of the second cell; a nozzle in the cross-tube receives the soft rubber tubing attached to a bulb syringe. By compressing the bulb, air is driven through the tubes into the fluid, and effects a very thorough agitation.

The *connections* throughout were made of *pure* copper, and the poles likewise. In order to protect these latter from the effects of the atmosphere, or a stray drop of acid from the battery, they were heavily plated with gold.[1] The other exposed connections were similarly plated, but simply for ornament and uniformity.

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[1] For particulars of the construction of this agitator, *see* U. S. patent, No. 167,510, issued September 7, 1875, and the March number of this JOURNAL.

[2] Foreman of the Galvano-Faradic Manufacturing Company's shop.

The cups employed were of vulcanite, and were obtained from Messrs. G. Tiemann & Co., and are the same as used in the Dawson battery manufactured by them.

The next point to be considered is the battery fluid. The plain solution of sulphuric acid and water, first used in connection with zinc-platinum and zinc-carbon (Grenet) batteries, is not sufficiently active for cautery purposes. Poggendorff added to the acid solution some bichromate of potash, which materially augments its power. Various modifications of Poggendorff's fluid have been employed, but the formula usually followed is something like the following: Dissolve one and a half pound of bichromate of potash in one hundred and six fluid ounces of hot water, then add slowly twenty-six fluid ounces of sulphuric acid. The solution is ready for use when cold. A much more energetic, and every way better, fluid may be prepared by first making a saturated solution of bichromate of potash in boiling water. Filter when cold,[2] and to every quart of the solution add eight fluid ounces of sulphuric acid, to which add when cold two fluid ounces of a saturated solution of nitrate of ammonium in nitric acid. This fluid may be used pure, but, even if diluted with an equal volume of water, it excites a very powerful current, and does not give rise to any nitrous fumes.

The whole efficiency of a galvano-cautery apparatus does not depend upon the battery alone. For, however good this latter may be, if the pole-cords and handle are improperly constructed, their imperfections may more than counterbalance the effects which the battery is capable of producing. The fact that makers of these auxiliaries do not, as a rule, construct them in the most efficient manner, leads me to give a moment to their consideration.

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[1] Nickel-plating, which it is now the fashion to employ about batteries, is a very poor substitute for gold, which, though costing a trifle more, will be found cheaper in the end.

[2] The bichromate, which crystallizes out on cooling, will of course answer for use again.

The *pole-cords* should combine in the highest degree flexibility and conductivity, so far as these properties are compatible with each other. The more flexible the cords the more readily delicate manipulations can be performed. The cords which accompany the ordinary small-celled galvanic battery, used for electrolytic purposes, possess sufficient flexibility, but owing to their small diameter they are comparatively poor conductors, and will not answer the present purposes. The cords must be constructed specially for the object in view, good conductivity being of the first importance, as the value of r must be as small as possible throughout the external part of the circuit, except in that portion of it which is occupied by the platinum instrument, for the less resistance encountered, and the less heat evolved in other portions of the circuit, the greater will be the value of C at the parts where we specially need it. We must, therefore, consider the length and thickness of the cords, and the material of which they are composed. As a rule, the cords are made unnecessarily long. I have seen them six, seven, and even eight feet, in length. These were, perhaps, necessary in days of the old unportable batteries, but, with the present small-sized instruments, which can be placed in the immediate neighborhood of any part of the patient's body, such lengths of cord are not required, are inconvenient, and, by adding just so much more resistance, prevent our obtaining the best effects. A length not exceeding four and a half feet will answer every purpose. The cords should be about the thickness of a Faber's lead-pencil, and if properly made will have sufficient flexibility. The material of which they are composed should be one offering the least possible resistance. Silver, pure copper, and commercial copper, are the only substances which need be mentioned. A few cords are made of the first, more of the second, while the majority are made from the third. In choosing between them we must be governed by the degrees of specific resistance which they possess. The specific resistance of silver being taken as 100, that of pure copper is 100.1 (Latimer Clarke), while that of ordinary commercial copper is 250. As there is so little difference between silver and pure copper, the copper, being the cheaper of the two, is to be preferred, and is the material which should always be employed; but, strange to say, Shepard & Dudley is the only city firm which, so far as I am aware, even pretends to use it. The cord is not composed of a single wire, but of a bundle of small ones. The number of these is important. One firm here uses 50 wires to the cord, another 100, and a third 150. The cords which I obtained from Trouvé contain 500. Upon theoretical grounds, which need not be here stated, the latter number is the best, and a few weeks ago I endeavored to persuade a manufacturer to increase the number of his wires. Argument failed to persuade him; and it was only when I demonstrated with the battery the very marked difference in favor of my own, that he was convinced, and consented to abandon his 50-wire cord for a better one. I mention this as an example of the difficulty which is usually encountered in persuading manufacturers to improve the quality of their instruments. They look at the matter from a purely commercial point of view, and sacrifice goodness to cheapness, believing that the majority of purchasers will not be in a position to criticise their wares.

The Handle.—The conducting parts of the handle should be of pure copper heavily gilt. One of the conducting wires should not be continuous, but should be broken in such a way that pressure upon a conveniently located button is necessary for the closing of the circuit. This is a matter of the utmost importance, and yet I have never seen it in an American-made handle, except in the one shown me by Dr. Sass which he had made for his own use. Some of the American handles possess no device whatever for opening or closing the circuit. Others possess a slide, usually in an inconvenient position. In the handle which I myself employ (Trouvé's), there is a combination of spring and slide which enables the circuit to be opened and closed instantly, or to be closed permanently if desired. The object of this contrivance is to keep the heat within due bounds. The only other methods of accomplishing this are, altering the degree of immersion of the plates, modifying the activity of agitation, or using a rheostat. These means must necessarily be under the control of the assistant, who of course receives his instructions from the operator.

But before the instruction given can be carried out, a wire may burn in two, or a white heat do harm, when a red one would have done good. Hence instant control of the heat should be in the hands of the *operator*. This is specially needful when desiring to use a small cauterizing instrument at a red heat, or at the close of a loop operation, for, as the size of the loop diminishes, it gets hotter and hotter, and either cuts too fast, or breaks most annoyingly, just before the end of the operation.

The *platinum instruments* themselves deserve a word. Some manufacturers arrange sets of cautery knives in which the platinum, twisted or hammered into different forms, is soldered into insulated conductors,[1] which in turn may be adjusted to and removed from the handles. This places the surgeon at the mercy of the manufacturer, and compels him to have a set of rather expensive knives, and if one of them breaks at an operation he cannot readily supply a substitute. A much better way is to have a single connecting piece, into which all the knives fit. If the surgeon is then provided with a few lengths of platinum wire of different calibres, and a small pair of pliers, he can himself construct at a moment's notice an instrument specially adapted to the particular case in which he desires to use it. He will in addition require a loop-carrier. Most of those made are elaborate, intricate, and expensive. The one which I myself employ is a slight modification of the one furnished by Trouvé, and would cost perhaps five dollars. A less convenient arrangement can generally be bought in the shops for about five times this sum.

A battery upon the foregoing principles has been constructed for me by the Galvano-Faradic Company, which has more than met my expectations. Details of its construction, together with hints concerning the care and uses of the cautery apparatus, will be given in the next number of this JOURNAL.

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[1] I have seen one set of knives which were soldered into *brass* conductors, which, having a very high specific resistance, is almost the worst metallic substance that could be employed for the purpose.

ART. III.—*On the Normal Urethra and its Constrictions in Relation to Strictures of Large Calibre.*[1] By ROBERT F. WEIR, M. D., Surgeon to the Roosevelt Hospital, etc.

THE questions to which this discussion has now narrowed itself seem to me to be comprised under two heads: 1. What is the size of the normal urethra; and, 2. What are its normal constrictions? Before presenting to you the views I have been led to entertain on these points, I beg to recall to mind briefly the present status of the discussion. From the remarks made at the meeting of the Society a month ago, it was evident, on the one hand, that the urethra in the dead subject could be distended to the diameter of ten to twelve millimetres in the middle of the spongy portion, and in the bulb from fourteen to twenty millimetres. These measurements correspond very nearly with those of casts I had similarly made in 1870 to illustrate some lectures on this subject, and which I shall presently exhibit to you, with others. And it is proper to remark here, in order to give due weight to such observations as have been made, that, according to Sir Henry Thompson, the method of determining the extensibility of the urethra by injections of wax and fusible metal is one of the best. In addition to the figures just given, those obtained by Reybard[2] by his registering dilator are also presented in the accompanying table.

TABLE I.

DIAMETERS OF THE URETHRA OBTAINED BY

	Fossa Navicularis.	Middle of Spongy Portion.	Bulb.	Membranous Portion.	Prostatic Portion.
Reybard (1853)	....	15⅓ mm.	18½ + mm.	18½ + mm.	18½ + mm.
Sands (1876), No. 1	11 mm.	10 "	14 "	....	....
" " 2	14½ "	11¾ "	16½ "	....	....
" " 3	14 "	11½ "	14 "	....	....
" " 4	14½ "	12½ "	20 "	....	....
" " 5[3]	13 "	11½ "	17 "	16 mm.	18 mm.
Weir (1870)	14½ "	13 "	18 "	....	....
Civiale	....	....	....	19 mm.	....
Teevan	....	....	....	....	18¾ mm.
Dolbeau	....	....	....	....	20 "

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[1] Read before the New York County Medical Society, February 29, 1876, in the discussion on "Gleet and its Relations to Stricture of the Urethra," inaugurated by Dr. H. B. Sands, January 24, 1876.

[2] "Rétrécissements du Canal de l'Urèthre," 1853, p. 12.

[3] This cast was recently made by Dr. Sands, and is marked A′ in the

To complete this part of the subject it is only necessary to add that, in respect to the membranous portion, Civiale found that it was, contrary to the ideas of many, even at the present time, capable of being distended to a diameter of nineteen millimetres, while from the researches of Teevan and Dolbeau we have been put in possession of the important fact that the prostatic part of the urethra can be dilated without rupture to the diameter of eighteen and three-quarters to twenty millimetres. The practical bearing of these data upon the operation of median lithotomy is evident to you all.

But, on the other hand, it was not only shown by Dr. Otis in the painless passage before you of a sound, of the size of No. 40 *f*, into the bladder of a living patient, but also by the revelations cf the urethrometer, admitted by all of us as an instrument of value in urethral explorations, that the urethra could be dilated in the living subject to a size much beyond what surgeons had been accustomed to. In addition to this, the statement was again brought to your notice that the size of the urethra corresponded to the circumference of the penis, and varied, in a number of cases, at most only a couple of millimetres beyond this fixed ratio. In respect to both these points, I, in common with those interested in this subject, have for some time past critically observed, both in my own practice and in that of others, in order to test the accuracy of these statements; but, while finding by the urethrometer, or by the *bougie à boule*, or by the sound after enlarging the meatus, that the canal was of the larger dimensions stated, yet many exceptions to the given ratio were met with. It was in those cases where incisions were resorted to by the dilating urethrotome that I first learned to distrust the rule. The blade of the instrument would frequently be carried four to six millimetres beyond the indicated size, and the stricture, even after it had been divided according to the rule, found not to equal the urethra in front of it. To escape this confusion, a suggestion in operating was carried out, of cutting the band so

woodcut. The irregularities resulting from the extreme distention are admirably shown, as well as the dilatability of the membranous portion. The urethra of the subject was unfortunately not examined microscopically, but to close inspection showed no abnormalities.

long as any obstruction was felt by the *bougie à boule*. However, it was soon ascertained that, after the first incision was made, a bulbous bougie of a sufficiently large size could always be made to catch at the upper angle of the wound. Since then, whenever it has been determined to incise a stricture up to the full size of the canal, the calibre of the urethra is previously ascertained by the introduction of the urethra-meter.

This, however, is somewhat of a digression, but it explains the steps in my loss of faith.

TABLE II.

SIZE OF THE URETHRA IN HEALTHY LIVING ADULTS.

Number.	Age.	Circumference of Penis.	Meatus.	Bulb, etc.	Ratio.
1	30	3 in.	No. 19	No. 44 + (the utmost capacity of the instrument used) for ¾ in.; then 37 for ½ in.; then 31 for ½ in.; then 26, which gave 2 jumps or hitches in next 1¼ in.; then 27 to fossa navic., which took 32..........	—
2	25	3¾ "	" 24	No. 44 + for 1⅛ in.; then 38 for ⅝ in.; then 33 for ½ in., with a decided jump; then 28 for ½ in., with jump thence to fos. nav., which took 30..........	—
3	42	3¼ "	" 15	No. 44 + for ½ in.; then 32½ for ½ in.; then 25 to fos. nav., which took 30..........	—
4	36	3¼ "	" 23	No. 33 for 1 in.; then 29 to meatus, making 2 jumps at depth of 2 in..........	—
5	45	3 "	" 26	No. 44 + for 2 in.; then 37 to meatus (Weir's measurement). No. 44 for 1⅜ in.; then 43 for ⅝ in.; then 36 to meatus (Mason's measurement)..........	+
6	28	3½ "	" 23	No. 43 for 1 in.; then 40 for ⅞ in.; then 33 to fos. nav., which took 35..........	=
7	21	3⅛ "	" 26	No. 45 for 1 in.; then 37 to meatus—fos. nav. not tested..........	+
8	33	3½ "	" 26	No. 44 + for ⅝ in.; then 41½ for 1 in.; then 40 for ⅝ in.; then 34 to meatus—fos. nav. not tested..........	=
9	19	3½ "	" 28	No. 38 + for 1½ in.; then 36½ for 1 in.; then 34 for ¼ in.; then 32 for 1⅝ in. to meatus; with 3 jumps..........	—
10	32	3 "	......	No. 44 + for 1½ in.; then 42 for 34 in.; then 39 to meatus..........	+
				Supplementary Cases.	
11	27	3½ in.	No. 23	50 mm. for ¾ in.; then 40 for 1 in.; then 35 for 1 in.; then 30 to meatus, with 1 jump..........	—
12	42	3½ "	" 26	45 mm. for ¾ in.; then 43 for ½ in.; then 40 for ¾; then 35 to meatus..........	=
13	35	3½ "	" 21	No. 39½ for 1¼ in.; then 37 for 1⅞ in.; then 34 for 1¼ in.; then 25 to meatus..........	—
14	35	3¼ "	" 21	No. 39 for 1½ in.; then 37½ to meatus..........	+
15	13	2½ "	" 28	No. 30 from perinæum to meatus, with a hitch at 2 in. from meatus..........	+ ?

Average of spongy portion in ten healthy urethræ, No. 32.1.

The table presented, marked II., shows the results of recent examinations of urethræ that were made, with the co-operation of my colleague Dr. Erskine Mason, and of Drs. Wallace and Heinmüller, Knight and Rice, of the Bellevue and Roosevelt Hospital house-staffs. The upper figures were derived from patients who claimed never to have had any urethral discharge. The lower portion of the table comprises a few whose history in this respect was unreliable or else who acknowledged that they had had gonorrhœa. I give these cases, not only because they were examined with great care and gentleness, resulting from a considerable experience with the instrument, but also for the reason that these examinations were tested by other instruments of like nature, whose construction carried out more fully the principle of the *bougie à boule*, in having a shoulder, than the urethrometer of Dr. Otis, which resembles more the ball-probe of Bell. Moreover, as several of these patients had been submitted a short time previously to an exploration, resorted to by Dr. Otis, their satisfactory statement as to the equality of the test, in respect to pain, etc., was of importance.

From this table the variation in the size of the urethra is seen to be quite marked. In only three out of the fifteen does the ratio hold good. Observe, also, in the boy's case the disproportion; but upon this it is not proper to lay too much stress, as the rule may be considered to apply chiefly to adults.[1]

It must be remembered, too, in justice, that the registration of circular urethral instruments is by the *numbers* of the French scale. Such is the custom, I learn, among all the instrument makers of this city, save in one instance. Hence No. 30 (and the more for the larger numbers), which has a diameter of ten millimetres, has, by multiplying this by the correct multiple of 3.146 (roughly $3\frac{1}{7}$), a circumference of 31 + millimetres. As Dr. Otis's ratio is given in millimetres, this should be borne in mind, and while it may diminish the disproportion in the figures below, yet it necessarily increases those above the supposed ratio.

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[1] The possible variation in the measurement of the penis itself has not been referred to. This is well shown in a case narrated subsequently in the discussion by Dr. E. L. Keyes, where the different external circumstances, such as cold and warmth, and internal conditions, as a full or empty bladder, without any evidences of erection, gave a circumference which varied on different days from three and five-eighths inches to four and one-eighth inches.

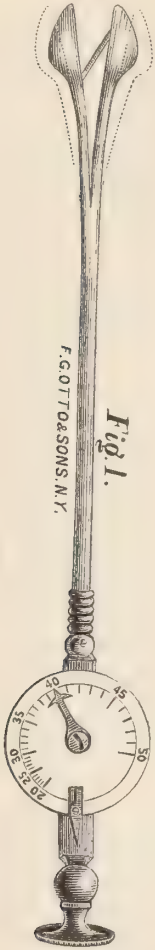

Fig. 1.

DR. WEIR'S URETHROMETER.—The rings on the shaft (*see* Fig. 2) locate the points of arrest, and permit subsequent accurate measurement.

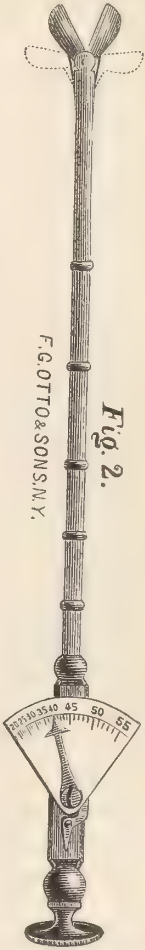

Fig. 2.

B. WILLS RICHARDSON'S URETHROMETER. *Dublin Medical Journal*, November, 1873. —Both of these instruments have been painlessly distended to their extreme limit in the bulbous portion of the urethra. The numbers indicate millimetres, not sizes.

But, as I saw these large sizes of the urethra demonstrated to me, I asked myself, as you have probably asked, Why did previous explorers, who knew of this dilatability of the canal, apparently ignore it and advise the restoration of a damaged urethra only to a certain inferior calibre? That they did so appreciate it a few short quotations will show.

Ducamp,[1] in 1827, said, in reference to the dimensions of the casts of Sir Everard Home: "We can obtain a radical cure of stricture in the urethra only by restoring it to its natural calibre. Now, if we compare the dimensions of bougies or catheters with those of the canal, we shall see that this result has never been attained, for the largest catheters in use, No. 12, are but three lines in diameter (i. e., No. 19 Fr.)." He also invented the bellied bougie, in order to dilate the canal without doing continued violence to the meatus. Yet he afterward limited his dilatation, etc., to four lines in diameter[2] (i. e., 25 Fr.).

Again, Civiale, whom I quote with especial reverence, for we must recollect we have in him the experience of a man who had treated fifteen hundred cases of stone, and that, too, in times when *débris* was often drawn through the urethra in the jaws of the lithotrite, a procedure surely calculated to discover the capacity of the canal—Civiale[3] says that, "whatever may be the variations among authors as to the diameter of the urethra, it is clearly demonstrated that the canal is larger than is generally believed." Yet he restricted dilatation, etc., to a diameter of eight millimetres[4] (No. 24), coupled, however, with the sage advice to continue the treatment until the gleety discharge ceased.

Richet,[5] another eminent French surgeon, gives from 30 to 38 as the measurement of the distended urethra in adults, but he, too, advises that instruments not larger than seven or eight millimetres in diameter (Nos. 21 to 24), should be used. And finally, Reybard[6] with his knowledge of fifteen and a third millimetres (No. 46), being the diameter of the spongy portion, states that eight and a third to nine millimetres (Nos. 25 to 27) mark the natural diameter of the canal.

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[1] Translation by Herbert, New York, 1827, p. 4.

[2] Page 120.

[3] "Mal. d'Org. genit.-urinaires," p. 34, edition 1858.

[4] Page 33.

[5] "Anatom. Medico-Chirurgicale," p. 739.

[6] Reybard, "Rétrécissements de l'Urèthre," 1853.

Upon what was such a determination founded by these distinguished observers? Upon probably two points: 1st. The inefficiency of the thorough division of strictures by Reybard's extensive internal incisions, and the failure of external urethrotomy, to effect a maintenance of the calibre of the canal; and, 2d. That these diameters represented to them the size which the ordinary performance of the function of the canal demanded.

It is not amiss, therefore, that a moment or two should be spent on the consideration of this latter point, inasmuch as thus far only the anatomical distention, so to speak, on the living and dead subject, has been entertained. Let us take up the question of calibre in respect to its physiological aspect. The facts germane to this point have been principally elicited by casts obtained by causing some solidifiable substance to gently flow through the urethra in such a manner as to simulate the natural discharge of urine. Some authorities, as Richet, in addition to injections, have endeavored to arrive at the same result, by slitting open the previously-undisturbed urethra, and measuring the width of the canal without any traction being made upon its edges.

The former method approximates so much more nearly Nature's performance of this function, that I have been led to adopt it for the purpose of determining—1st. The size of the urethra in ordinary forcible urination, representing the ordinary physiological distention; and, 2d. The size of the urethra in obstructed urination, representing the extreme of physiological distention.

Inasmuch as the details employed by Richet and Reybard are not given, I have resorted to the following means to arrive at a solution of this question:

Experiment I.—From a series of trials, in which some friends coöperated, it was found that urine could be projected in adults varying from thirty to forty years in age, and with meatuses from Nos. 22 to 26, a distance three and a half to four feet when the penis was held horizontally and the bladder distended with several hours' accumulation of urine. Forcible and steady expulsive efforts of the abdominal walls were employed on these occasions.

A penis with a meatus of No. 24 was then obtained from the cadaver of a man of twenty-six, and water forced through it by attaching it to the faucet of the wash-basin, which was turned on until the distance acquired by the jet reached four feet, when the urethra was pinched simultaneously, by an assistant, at the meatus and membranous portion, and the imprisoned fluid collected in a graduated measure. This was repeated twice for correctness. The contained fluid was in each instance the same, viz., three drachms. This amount, with three-quarters of a drachm in addition, as an allowance for the fluid retained in the nozzle of the syringe and connecting tubing, in all three drachms and three-quarters, of a preparation of Chinese gelatine and glycerine, liquid at a moderate heat, was forced into the urethra to the same points. In a few minutes sufficient hardening occurred to allow of the cast being withdrawn as it was exceedingly smooth and slippery.

A second cast was made, but it unfortunately became damaged ; its measurements corresponded, however, with the first one, showing, of course, only by this, the accuracy in manipulation.

The diameters of this cast, from which those marked *B* were made, are as follows :

At the fossa navicularis,	8	millimetres,
“ “ end of the fossa navicularis,	8	“
“ one and a half inch from the meatus,	8½	“
“ the bulb,	14	“

which corresponds, it will be seen, quite closely with the diameters accorded to the natural canal by previous observers. The cast also shows a number of transverse irregularities on its surface, best appreciated in gently drawing the finger along the moistened gelatine cast. It does not, however (nor was this to be expected), show at two and a half or at three and a quarter inches any trace of the strictures detected at these points by Nos. 29 and 30 *bougie à boule.*[1]

We have now, I think, a fair representation of what is indicated by the natural distention of the urethra. So, in order to appreciate the dilatability of the canal under the influence

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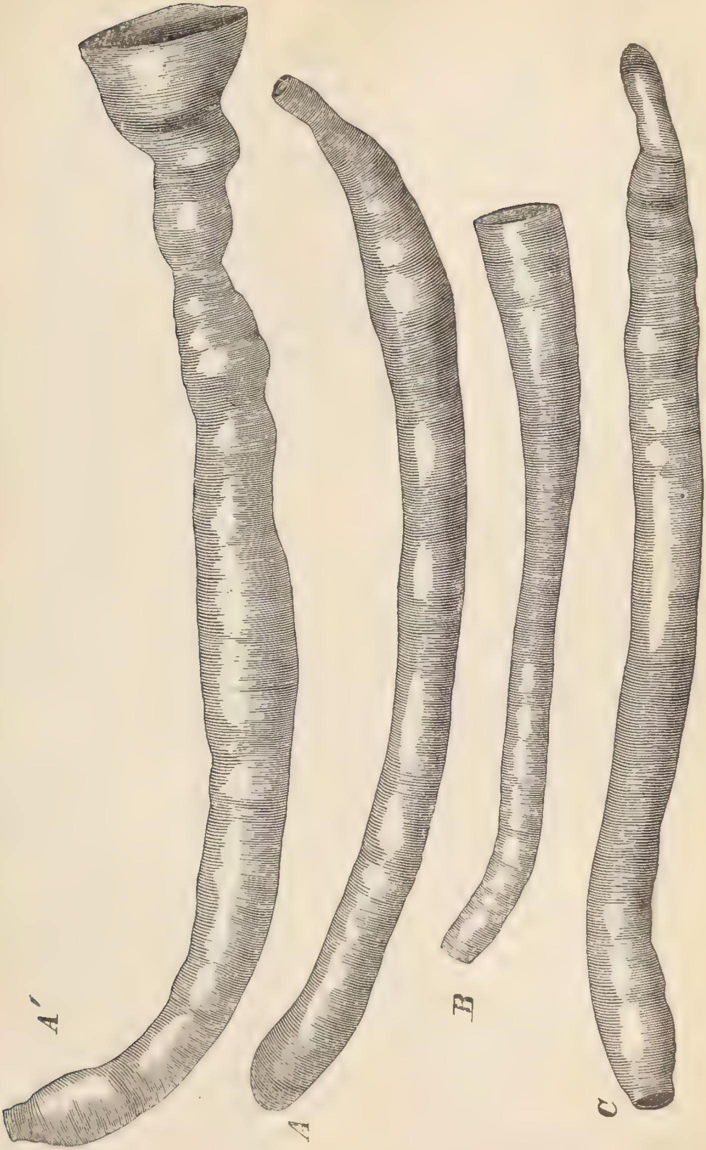
[1] See Case No. III., *post.*

FIG. 3.



A′, Forcible distention of a healthy urethra in the cadaver; *A*, Urethra less strongly distended; *B*, Distention of the urethra in full, free urination; *C*, Forcible distention of the urethra in the living subject.

of the full power of the bladder and accessory parts, the following procedure was devised:

Experiment II.—Urine was voided after several hours' retention, and after the flow had become fully established it was directed into a mercurial gauge, with an assistant to mark the height to which the mercury ascended. This was tried several different times; the expulsive force being exercised up to the point of causing painful distention of the urethral canal.

A mixture of plaster of Paris was then forced into a urethra (of a penis three and a half inches in circumference, and with a meatus of No. 23), which was attached to the gauge until a similar pressure was marked by the column of mercury. It was allowed to harden under this pressure, and the urethra then laid open, the cast removed and measured. The diameters thus obtained were:

At the fossa navicularis,	11½	millimetres.
" " end of fossa navicularis,	11	"
" one and a half inch from meatus,	11	"
" the bulb,	14	"

This cast is marked *C*, and shows to a still more striking degree the transverse ridges observed in the preceding smaller one, as well as those of Sir Everard Home and Dr. Sands.

Now, these dimensions, with those obtained by the urethrometer, and by solidifiable injections, give us, in recapitulation, the diameter of the middle of the spongy portion of the canal in

Normal micturition, as	8½ to 9 mm., or 26 to 28½ mm. in circumference (Weir, Reybard, etc.).
Extreme of physiological distention, as	11 mm., or 34 mm. in circumference (Weir).
Anatomical distention on living,	a circumference of 32 mm. (Weir), 31.81 Otis (part of canal not stated).
Anatomical distention on dead,	a circumference of 32 to 36 mm., (Sands); 48 mm. (Reybard).

From such data it can be easily understood why those who recognize the rarity of a cure of stricture, from experience in this disease, and from analogies of contractions elsewhere, arrest their endeavors at the point of the natural physiological calibre of the urethra. But those who are yet hopeful of a radical cure, or even only of a tardy return of the disease, carry their incisions or dilatations up to or beyond the point of thirty-two millimetres, the average point of the anatomical distention in the living subject. I confess to be one of those who prefer in gleet to distend the canal up to a large size by sounds, since reading a synopsis of an article of M. Allaire's,[1] published in 1865. From this author I learned to carry the dilatation of strictures causing gleet up to beyond the then-called normal calibre, by dividing the meatus. These dilatations were brought up by me frequently to No. 32, and sometimes beyond, in the belief not only that the recognized stricture, in the old interpretation of that term, was thereby more thoroughly stretched, but also, when the gleet was not of such origin, that the pressure exerted by the extra large sound upon both the mucous membrane and the musculature[2] of the prostate was of a most beneficial nature. And it is with satisfaction that I find the present anatomical consideration of the subject justifies this practice.

In respect to the treatment of gleet from strictures of large calibre by incisions, the risks from hæmorrhage, urinary fever, abscess, and the more or less permanent curvature of the penis, which is sometimes sufficient to prevent coitus, have always seemed to me to be too great to be lightly resorted to, and especially do I feel more convinced on this point since some observations, begun in 1873, and recently resumed, have furnished stronger reasons for this adverse conviction.

The consideration of these observations is, in reality, that of the second question, What are the normal constrictions of the male urethra, or, rather, of its spongy portion?

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[1] "Recueil des Mémoires Médicales et Chirurgicales Militaires," December, 1865.

[2] It is to this pressure that I attribute the relief afforded to those urinary difficulties and pains which radiate from the prostate as a centre. The analogous benefit derived from stretching the bladder end of the female urethra supports this view. (*See Boston Medical and Surgical Journal*, January 27, 1876.)

In operating, in 1873, upon a boy of thirteen years (with a penis of two and a half inches in circumference) for traumatic subpubic stricture, I found that, after completing the required external perineal urethrotomy, I could pass a No. 30 *bougie à boule* very readily from the perineal wound to the meatus; which latter was large enough to admit No. 28. The urethra readily received this large instrument, save at a point two inches from the meatus, where an arrest or hitch, decided in character, was experienced both in going and in coming. A subsequent inquiry revealed no history of injury at this point.

Some time after this, the same operation was performed upon a man of thirty, at the Roosevelt Hospital, for traumatic stricture. This patient had never had any venereal disease. On passing a No. 30 *bougie à boule* from the wound to the meatus it hitched decidedly at the penoscrotal junction, both in going upward and in returning. The patient died four days afterward from septicæmia, and the urethra was secured for examination. The pathologist of the hospital, Dr. Delafield, reported that the urethra was normal, and that no evidence of any stricture was to be found by the microscopical examination.

No other opportunity in the living subject has been afforded me of similarly investigating this point, but during the past few weeks I have examined still further in the cadaver whether these constrictions were anatomical or pathological in their character. If the latter, they were to be truly called strictures, as Sir Henry Thompson[1] defines a stricture to be an "abnormal organic contraction of some portion of the urethral canal."

I regret, however, to state that, owing to the recent great demand for penes, the number of examinations made in connection with this point has been quite limited.

I have, however, examined five urethras, and in each have found the so-called strictures of large calibre. In detail, the cases are as follows:

No. I.—From a man about thirty-five years of age, whose penis measured two and a half inches in circumference.[1] The meatus, which admitted No. 23, was incised to receive No. 40, which was arrested at a depth of two inches, at which point a No. 35 passed with a jump, and was markedly caught in its withdrawal. A No. 32 was also arrested, in entering and returning, at a depth of three and a half inches. These were detected by Otis's urethrometer. To test the value of Richardson's explorer (Fig. 2), it was introduced, and three other strictures recognized adjacent to the one at three and a half inches, and of the same size (i. e., 32): five strictures were therefore recognized. The examination was repeated by Dr. Heineman, the assistant pathologist of the hospital, who, however, only detected four strictures. The urethra was then laid open and carefully inspected. Its surface was smooth, and indicated neither to sight nor touch anything abnormal. The strictured portions were subsequently examined by Dr. Delafield, and his report was, that "the urethra examined microscopically by him did not differ in appearance from corresponding portions of other healthy adult urethras."

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[1] Thompson "On Stricture," third American edition, p. 63.

No. II.—From a man of unknown age, penis three and a half inches, meatus twenty-three. By my dilating urethrometer (Fig. 1) raised to thirty-five millimetres, a decided hitch was felt in going and in returning, at three and a half inches. This was corroborated by a *bougie à boule* introduced from the membranous urethra. The canal was then inspected, and appeared and felt normal. Dr. Satterthwaite, the pathologist of St. Luke's Hospital, kindly made the microscopical examination for me, and, in his words, found that "the mucous membrane was apparently unchanged in character, nor was there any marked change in the corpus spongiosum.[2]

No. III.—From a patient aged twenty-six; cause of death, phthisis. The penis in the denuded state in which it was received measured two and a half inches. The meatus admitted No. 24. A *bougie à boule*, size No. 30, was introduced from the membranous urethra, and showed, by its arrest in going and returning, a narrowing at three and a quarter inches from the meatus, and this bougie was again halted at a distance of two and a quarter inches from the meatus by a constriction, through which only a No. 29 could pass, and then with a jump. The urethra was examined by Dr. M. D. Mann, lecturer on clinical microscopy, in the College of Physicians and Surgeons, who reported the mucous membrane and its epithelium unchanged, and that the subconnective tissue was of uniform thickness. Cast *B* was from this specimen.

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[1] No special importance is attached to this measurement, as considerable traction had been made upon it prior to the record being taken, and also from the fact that the *post-mortem* shrinkage was found to vary considerably.

[2] As a singular pathological change, though, from the normal character of the corpus spongiosum and the urethra, not bearing on the present point, there was found in the right corpus cavernosum a mass of fibrous stricture, nearly replacing its erectile tissue. This extended over a distance of about three centimetres.

No. IV.—From a man of unknown age and history; penis three and three-quarters inches, meatus seventeen. This was incised to-day to admit 35, which was arrested at one and a half inch; 33 was then introduced to a depth of three inches, and caught going and returning at that point. The urethra was opened, and is submitted to your inspection. At the site of the hitch indicated by the pin, the mucous membrane was apparently more movable than elsewhere, and there were seen two whitish depressions nearly on the same plane but not encircling the urethra. After the lapse of a short time the lines became quite indistinct. My observation was corroborated by Drs. G. A. Peters and M. D. Mann. The urethra will be submitted to microscopical investigation.

No. V.—Also examined to-day and presented as the freshest specimen, from a man aged forty-five, who had had gonorrhœa and chancre; penis three and three-quarters inches, meatus twenty-three. No. 29 caught at two and three-quarters inches. Half an inch farther in, another hitch was felt by Richardson's and Weir's urethrometer raised to thirty-one millimetres. No. 28 passed with perfect ease. On opening the urethra, two partially transverse lines, slightly depressed, and of a uniform color with the adjacent part of the urethra, were found; at six and a half inches a stricture admitting No. 19 was met with.[1]

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[1] Since the above was written Dr. Mann has made a microscopical ex-

In all there were six examinations, five in the dead and one in the living subject, made of constrictions varying in size from No. 29 to 35, four of which presented under the microscope no evidence of any pathological changes. But, as it may be objected that a minute pathological alteration may in the lapse of time so closely approximate the normal condition as to be indistinguishable by the microscope, it was considered desirable to have, if possible, some additional corroboration of these unexpected results. This end was attained by the examination of the urethra of a boy, about three years of age, whose youth presumably insured freedom from inflammatory attacks. In this child, whose penis measured one and a half inch in circumference, I obtained a similar result. The meatus was enlarged to admit a No. 14 *bougie à boule*, which was arrested at the penoscrotal angle, both ways, and a No. 16 in its turn arrested markedly once between this point and the meatus. This was verified by Dr. Heineman, who has, I desire to acknowledge here, materially assisted me in these researches.

That this child's urethra was not unduly distended is determined by the circumstance that in two living children, each aged four years, a No. 16 was passed by Dr. Beckwith at the Nursery and Child's Hospital, through an undivided meatus to the bulb without inconvenience.

Are these constrictions anatomical, or were they produced by the instruments used? From their equally ready detection by the spindle-shaped instrument of Otis as well as by the *bougie à boule*,[1] and the other more irregularly-shaped instruments, and also from their locality remaining unchanged in the repeated explorations resorted to, I was inclined to the former view. But in the last two specimens the depressions noticed pointed strongly to a duplicature of the mucous membrane, as a cause of the hitching. The microscope did not aid in the solution of this point.

As to the frequency with which these constrictions, if such

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amination of the strictures of large calibre, and reports that nothing abnormal was to be seen at the points where Nos. 29 and 31 caught.

[1] The *bougies à boule* used had metal stems, with metallic or hard-rubber bulbs.

they are, are to be found, and as to their influence in interfering with micturition I cannot, of course, from such limited data say: but from the smoothness generally observed in the opened urethræ, and from the fact that in the casts *B* and *C*, made from urethræ Nos. II. and III., no trace of any extra constriction is to be seen at the points where the detecting instruments were caught, the inference would be, that they would not interfere with micturition, nor cause any stagnation of urine.

Also, if they are normal constrictions, statistics based upon their non-return after division must of necessity not apply to the question of a radical cure of stricture; *and whether they be considered constrictions or duplicatures of the mucous membrane, it must be admitted that our heretofore relied-upon methods of exploration are not sufficiently trustworthy for us to distinguish between normal and abnormal narrowings of the urethra, certainly from No. 29 upward.* An amendment to the statement of Dr. Otis is therefore demanded, for he says, "Complete freedom from stricture can only be demonstrated by the easy passage of a bulbous sound of a size fully equal to the normal calibre of the urethra."[1]

The *bougie à boule* has not been free from the censure of others, for B. Wills Richardson, in the *Dublin Medical Journal* for November, 1873, says: "I believe it to be a deceptive urethral explorer. If, for instance, after having been passed into the healthy urethra to the bladder, it is then gradually withdrawn, the bulb will frequently follow the stem by a series of jumps or jerks, and may thereby lead to the supposition of the presence of a stricture where none exists." Thompson[2] also speaks slightingly of the instrument.

I should, in concluding this portion of my subject, regret to be understood, from the preceding remarks, as denying the existence of veritable strictures of large calibre; for the pathological changes to which the almost continually-closed urethra is subjected in inflammation, it is well known, can vary from the slightest impairment of the elasticity of its walls, to the severest degree of stenosis. Our mode of detection of such strictures is, however, I am compelled to say, as yet imperfect.

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[1] "Radical Cure of Stricture," p. 10.

[2] *Lancet*, December 11, 1875.

If your patience will permit, I should like to direct your attention, for a few moments, to the normal size of the meatus urinarius, about which some confusion has recently been shown by the views entertained by Dr. Otis.

The narrowing of the meatus urinarius is classed by this author as a stricture in these terms: "In point of fact, besides varying congenitally more than any other orifice of the body, it is more often strictured from disease than any other portion of the body;" and in his work on "Gleet," etc. ("American Clinical Lectures," No. x., p. 8), he quotes Henle (erroneously it has been shown) to support his view that the meatus should equal the fossa navicularis in size.

To aid in settling the question of the normal size of the meatus, I have to present the record of one hundred and twenty-five measurements of that orifice in adults. They range from No. 12 to No. 37. Of those below 20 there were, however, but ten; of those above 30 there were but eight. Between 20 and 30 there were one hundred and nine, or 87 per cent., or, if the numbers were extended, one at each end of the scale, that is, between 19 and 31 inclusive, there were one hundred and fourteen cases, or 91 per cent.; of these, of No. 19 there were four; 20, three; 21, nine; 22, twelve; 23, thirteen; 24, eleven; 25, thirteen; 26, fifteen; 27, eight; 28, ten; 29, six; 30, seven; 31, three. Most of these cases, it will be observed, occurred between the Nos. 21 to 28, i. e., ninety-one in all, or 73 per cent. This would indicate the range as the normal limit. These data agree very nearly with those given by Civiale, Reybard, Thompson, Henle, Rollet, Phillips, and Voillemier, these authorities making the diameter of the meatus to vary from six to ten millimetres, Nos. 18 to 30.

The casts of Dr. Sands and the Table II. also show that a normal disproportion exists between the meatus and the fossa navicularis. This latter point is also, as would have been supposed, more sensitive to pressure.

In eight of the thirty-eight cases where the urethra was also explored, there was found, within one-quarter to one-half an inch from the meatus, a narrowing which was from one to six millimetres smaller than the meatus itself, and in one case this was from 30 to 21, nine numbers. This anatomical peculiarity is spoken of by Thompson and others as a congenital contraction, and of rare occurrence. May it not act, within moderate limits, as the *vena contracta* known to physicists, and so expedite micturition?

When the meatus is narrower than the normal standard, it has been known to originate and perpetuate a cystitis by impairing the relation between the expulsive power and the freedom of escape of the urine. Furneaux Jordan (*Surgical Inquiries*, 1873, and recently in *Lancet* for January 29, 1876) gave several such cases occurring from congenitally small openings, to wit, "a line or two in length," and states that there is no result of stricture that he had not seen follow a small meatus, except retention, extravasation of urine, urinary abscess, and perhaps renal disease.

In concluding these remarks, I beg to recapitulate briefly:

1. That the spongy portion of the urethra is the smallest (except the meatus) and least dilatable portion of the canal.
2. That normal constrictions are to be met with in this portion of the canal as small certainly as No. 29.
3. That the healthy urethra in this portion can generally be readily and safely dilated up to an average size of 32 millimetres.
4. That the normal size of the meatus is from No. 21 to 28.
5. That the urethral canal is, in the excellent words of Jarjavay,[1] "narrow at the meatus, dilated in the gland, and very slightly narrowed at the termination of the fossa navicularis; then it forms a cylinder nearly uniform to the prepubian angle, where a coarctation is often found. It enlarges then to the bulb."

It is unnecessary to add this anatomist's description of the deeper portions of the canal, as it is beyond the reach of the present discussion.

Art. IV.—*The Universal Syringe.* By W. M. Chamberlain, M. D., New York.

The "universal syringe," as it is called, though not a new combination, is perhaps not as generally known as its merits warrant.

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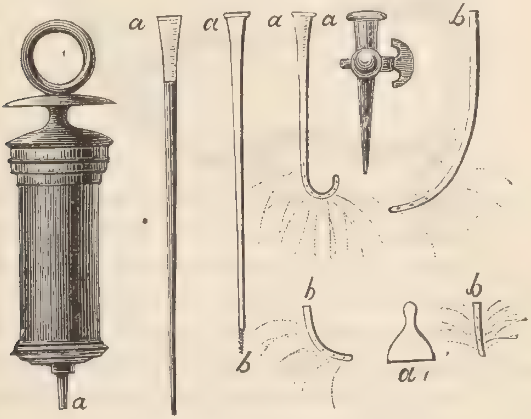
[1] "Recherches Anatomiques sur l'Urèthre," 1856, p. 208.

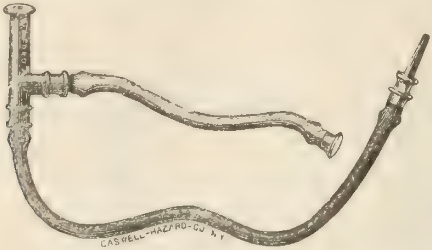
Inspection of the accompanying woodcuts will show what uses it may serve, and how far it is capable of taking the place of several distinct instruments. In the first cut we see a well-made hard-rubber syringe. Upon the upper portion of the barrel is a collar, to be held between the first and second fingers; the thumb slips through the ring in the piston. The instrument may thus be firmly held and easily operated by one and the same hand, for the length of the piston corresponds to the distance to which the thumb may be drawn backward. The delivery-tube is rudimentary, designed for the attachment of other pieces: 1. It makes a tight joint slipped into the short, conical hard-rubber canula, having a stopcock in it. By aid of this, hard or soft rubber tubing of any calibre, from that of the Eustachian catheter to that of the rectum-tube, may be connected with the syringe. 2. It fits directly, or by intervention of the piece just named, a canula of flexible metal which may be bent over a stylet, to enter the uterus or any sinus, e. g., the troublesome sinuses which form in the groin after buboes. 3. A silver canula with screw tips of various curve and perforation. This enables us to apply medicated injections to the anterior and posterior nares, Eustachian canal, pharynx, larynx, urethra, and bladder. 4. A bulbous obturator to occlude the nostril or external auditory canal.

FIG. 1.



The second woodcut represents an attachment which I have recently devised. A hard-rubber tube, two inches long, fits tightly on the delivery-tube. At the distal end is a valve opening *upward*, like those of the Davidson syringe. In the lateral arm of this tube is another similar valve opening *outward.*

Fig. 2.



Attaching an India-rubber tube and aspirating canula to the first, and plain tubing to the second, we have a simple and powerful aspirator. The valves are automatic, and can hardly get out of order, for they are simple cones of vulcanite, not liable to wear or corrode. I have twice aspirated the pleura and several times a hydrocele with it, and desire no better instrument. I find it less wearying and more reliable than a vacuum-bottle. With proper care of the piston-packing, the instrument may be used for transfusion. This attachment costs but $1.50; with tubes and aspirating canula, $3. Mr. Ford, of Caswell & Hazard, will supply a neat case containing all the fixtures for less than the cost of many of the aspirators; or the nozzle of any hard-rubber syringe may in a moment, with a bit of sand-paper, be reduced so as to fit into the aspirator, which is sold separately.

Art. V.—*The Topical Treatment of Chronic Dysentery.*

By M. Dills, M. D., Carlisle, Ky.

There appeared, in the January number of the New York Medical Journal, a communication from Dr. T. Gaillard Thomas, on the topical treatment of chronic dysentery, the case reported by him, and those of Dr. Maury, being the first I had seen published. The following three cases came under my care during the summer of 1875, and I believe them to have been extreme cases, comparing in severity of symptoms with those reported by Dr. Thomas.

I have been induced to believe that chronic dysentery has its principal seat in the large intestine, from the pathological conditions described by Niemeyer, who says (vol. ii., page 651): "The serous coat appears cloudy and dull from œdema. This change occurs chiefly and generally exclusively in the large intestine, and it is rare for the dysenteric affection to extend to the lower portion of the small intestine," etc. Again, we find this pathological condition referred to by Heubner, (Ziemssen's "Cyclopædia," vol. i., page 544): "It is a well-known fact that any irritation in the colon will produce a reflex action in the small intestines." When we have satisfied ourselves of the local cause or seat of the disease, he suggests topical treatment. There seems to me to be one other marked indication of the disease having its seat in the lower bowel, viz., the almost constant and severe tenesmus, depending entirely upon the condition of the mucous membrane of the colon. I do not pretend to say that the disease is entirely due to the large intestine; but when it assumes a chronic form the colon becomes its chief seat; and, by stimulating these membranes to a healthy action, there is at once obtained rest for the remainder of the intestinal canal. I submit three cases, with their history and treatment:

The first case was that of a girl, fourteen years of age, previously healthy, with no predisposition to any strumous diseases. She was first taken ill November 5, 1874. She was then attended by an eclectic practitioner, who diagnosed typhoid fever. He continued to treat the patient until the middle of January, 1875, when a regular physician was called in. He pronounced the case to be one of chronic dysentery, and directed treatment, with some little temporary relief to the patient. I was called in June 1, 1875, and found the patient so reduced that she could not be raised from her bed. There was complete loss of control over the bowels, discharges of mucus and blood occurring every few hours. There was complete anorexia, the stomach refusing everything but small pieces of ice. The pulse was 130, and scarcely perceptible. The temperature ranged from 98° to 102°; the skin was bathed with a clammy sweat, and I was informed that the body had emitted a cadaverous odor for several days previous. Her discharges contained no fecal matter whatever, and had no fecal odor. My prognosis was extremely unfavorable, as death seemed to be inevitable; but I suggested examination of the lower bowel, under ether.

We found, first, the sphincter ani very much relaxed, and had no trouble in introducing a good-sized bivalve speculum. The mucous membrane we found to be highly inflamed, and studded over with small yellowish ulcers, which, on slight pressure, emitted a colored fluid. We applied lunar caustic freely to every part of the bowel as high as we could reach with the aid of a retractor. The patient soon rallied from the ether, and, aside from a little pain, expressed herself as being greatly relieved, especially of tenesmus. We ordered a diet of milk and raw beef, and a solution of carbolic acid (one part to eight of water) to be injected into the bowel once a day. I saw the patient three days after the first application, and she had then control over her bowels, which acted only three or four times in twenty-four hours; the appetite was improved; the skin moist; tongue cleaning off, and there was a general indication of a speedy recovery. I examined the bowel, and found yellow points, with the mucous membrane exfoliating. I applied caustic to the most dependent parts, and continued the carbolic injections. From apparent inevitable death this patient made a complete recovery in two weeks from the time of the first application. If I have erred in describing this case in any way, it has been in not fully drawing the more unfavorable symptoms.

The second case was that of a boy six years of age, in whom chronic dysentery followed measles. He was first attacked with dysentery in September, 1874, and gradually grew worse until April, 1875, when I first saw him. Every remedy that could be thought of, both professional and domestic, had been thoroughly tried, but to no purpose. The symptoms were very much like those of the preceding case, with the exception of less emaciation. I suggested the same treatment as in the former instance. I introduced the speculum, and at once proceeded to make an application of caustic, though less thoroughly than in the former case. I then ordered the injection of the carbolic solution once a day, and a diet of boiled milk and raw beef. The patient began to improve, and in three weeks was entirely well. I applied the caustic but once.

The third case was that of a young man who had contracted dysentery during the late war. I had treated him during the summers of 1872 and 1873 with little success. He had consulted a number of our distinguished physicians, and returned to me in September, 1875, for treatment. I informed him of my new method of treating dysentery, and he was very anxious to try it. I examined him, and found the same condition of the mucous membrane as in the preceding cases, but could discover no ulcers. In this case I used pure carbolic acid, which gave him considerable pain for some hours after the application. I followed the application by injections several times daily of glycerine, tannin, and tincture of opium. Six days after the first application I used the nitrate of silver, the patient at this time feeling more relief than he had had for five years. I then ordered him to use the carbolic injections twice a day for one week. I did not see him again until December, 1875, when he stepped into my office looking like a new man.

This concludes my report of three typical cases of chronic dysentery, all cured by topical treatment.

Clinical Records from Private and Hospital Practice.

Art. I.—*A Case of Tobacco-Poisoning.* By John N. Bigelow, M. D., Albany, New York.

August 28, 1875, I was hastily summoned to attend Mr. T. S., aged twenty-six, clerk, single, who had been suddenly seized with a convulsion while walking with a friend on the street. He was stricken without premonition, and was conveyed to a neighboring store, where I saw him. His skin was pallid, and presented an anæmic appearance; his features were pinched and contorted; his pulse was irregular, variable, and intermittent, at one time 136 per minute, and in a short time thereafter down to 38 per minute. The heart beat very irregularly;

this was evinced by palpitation and tremulous motion of the organ, especially when lying upon the left side. The heart-sounds were muffled and seemed to almost run into each other, indicating that variety of irritable heart recently referred to by Dr. Adams in the *Lancet.* The temperature ranged from 98° to 99.5° Fahr. His lips were pale and bloodless, his eyes staring, pupils dilated. He complained of great pain and distress in the left side of the chest, especially around the præcordial region; suffered from dyspnœa, drew long sighs, made a gulping effort at emesis, had hiccough and cold perspiration, and presented great nervous prostration.

These symptoms were rapidly succeeded by clonic convulsions, which produced great muscular agitation, particularly of the extremities. The teeth were grit together, hands tightly clinched, the legs flexed and extended in rapid alternation. With the cessation of these spasms the patient complained of anæsthesia more or less complete, especially of the left side of the extremities, and of the tip of the tongue; also spoke of excessive languor and nervous tremor.

These convulsions were not attended by any loss of consciousness, for on their cessation he would repeat our conversation, and assure us that, although he knew what was occurring around him, yet he was powerless to help himself, or to control the excessive muscular perturbations. It was during the first visit that I noticed, after the transit of the convulsions, a cataleptic condition of the arms and legs. If a leg or arm was extended or flexed or uplifted, it would retain that position for at least five minutes, or until it was reduced to a more comfortable posture. This condition passed off and was succeeded almost immediately by hysteric tremors, with convulsive twitching of the flexor muscles of the whole body, accompanied by an agonized apprehension of some rapidly-approaching physical catastrophe, the result of which would be death. He would clutch the arm of any bystander and beseech him to save his life, to relieve him from the great præcordial distress and threatening suffocation. This fear was in some subsequent attacks the cause of prolonged mental and bodily excitement. Conversation, rapid walking, or any violent motion of the attendants, would provoke this spasmodic attack and produce great nervous irritability. His disposition, from being amiable, became fretful and peevish. At the time of the first attack there was administered, hypodermically, sulph. morphia, gr. ¼, and prescribed:

℞.	Brom. potass.,	gr. x.
	Ammon. carb.,	gr. v.
	Aquæ,	℥ ij.

repeated every two hours. He was removed to his home, where I saw him again on the 29th of August. On careful inquiry I learned that this attack was the third, each attack occurring at an interval of six months.

Mr. S. had smoked tobacco since he was twelve years of age, some days using as many as ten cigars and often substituting for luncheon three or four strong ones. He had little or no appetite most of the time, was pale and cadaverous, languid and weak; ate but little, and at irregular intervals; but, from the time he arose in the morning to his retirement at night, he was never without his "weed." He was restless, would start and jump in his sleep, had become irritable in disposition and enfeebled. A searching scrutiny of his family history failed to elicit any trace of epilepsy or other nervous disorder, and with regard to himself he denied any other sickness than the present.

The above treatment was continued until the 1st of September, when a tonic of the elixir ferri strych. et quin., ʒj, after meals, and pot. brom. grs. xv at bedtime, were given. He had resumed his occupation, and had so much improved that I ceased my visits, after prescribing diet and interdicting tobacco in any form. I left him not altogether clear in my mind as to the cause of the singular symptoms he had presented.

September 5, 1875, I was again summoned. He was under the influence of the "worst fit he had ever had," as the messenger said. On arriving at the house of the friend he was visiting, I found him reclining on the lounge, presenting the appearance, in speech and looks, of an acute maniac. At one moment seizing his friends he would implore them to save him from some indescribable "something," which was stifling him. The next moment he fell into the most violent convulsions I have ever witnessed. He presented the same symptoms in rapid succession as have previously been narrated, excepting that his fear of death had become a mania. On inquiry I found he had been quite fretful for a day or two previous, neglecting his meals, and smoking from eight to fourteen cigars daily. I prescribed: ℞. Ammon., quin., zinci, valerianatis, āā gr. j; simple sirup, ʒj; to be given q. 3 h.; and pot. brom. gr. x, tinct. aromat. comp., ʒj, syr. simp., ʒij, to be given q. 6 h. The 6th of September he was much better, but still suffered severely from hysteric and ataxic tremors of the limbs; also complained of great distress in the cardiac region, which would occasionally precipitate a transient convulsive agitation of the whole body. He could hardly sit upright, and called my attention to great numbness of the extremities, and of the tongue. He felt cold and chilly. Continued the same treatment. On the 7th he had so far improved as to be able to sit up in an easy-chair, slept well, and had no return of the spells for some four hours. On the 8th, Dr. Hun was called in consultation, and confirmed the diagnosis of tobacco-poisoning, and approved the treatment. From this time onward preparations of strych. and iron, good diet, fresh air, and moderate exercise, were enjoined, also pot. bromide in gr. x doses twice daily, in combination with tincture aromat. comp. in ʒj doses.

On the 11th he went into the country, and returned on the 30th, fully restored in health, and better than he had been for years.

Since that time on three occasions he has smoked from four to six cigars in succession, followed by a return, with greater or less violence, of the symptoms. He has since given up entirely the use of tobacco, and now enjoys the best of health.

Connected with the above example of the evil effects of the abuse of tobacco, it may be interesting to note a few other results which have been mentioned as attendants of tobacco-poisoning. Owing to the enormous consumption of tobacco in France, and the alarming increase of nervous disorders in the empire, Napoleon III. called the attention of the Academy of Medicine at Paris to this subject. A scientific statistician with an imperial commission was empowered to collect facts and data for a report, and a commission was appointed to inquire into the influence of tobacco on the human system. The report stated that a large number of the diseases of the nervous system and of the heart, noticed in the cases of those affected with paralysis or insanity, were to be regarded as the sequence of excessive indulgence in the use of tobacco. M. Jolly said that "tobacco seems primarily to act upon the organic nervous system, depressing the faculties and influencing the nutrition of the body, the circulation of the blood, and the number of red corpuscles in the blood." Attention was also called to the bad digestion, benumbed intelligence, and clouded memory, of those who used tobacco to excess.

Dr. B. W. Richardson observes that "smoking produces disturbance of the blood, of the stomach, heart, and brain, of the organs of sense, and of the nervous filaments of the sympathetic and organic nerves." Again, he states that "tobacco-smoking arrests oxygenation of the blood, and thus interferes with the full development of the structures of the body, especially in the young."

Dr. Hutchinson, of London, also mentions amaurosis. Dr. Derby, assistant to Prof. von Graefe, notes color-blindness as an occasional sequence to tobacco-smoking.

Whether the convulsions we have reported were due to anæmia of the brain, or the result of more or less permanent derangement of the organic system of nerves, is a question of vital interest to all admirers of the fragrant Havana.

II.—*Case of Poisoning by Cyanide of Potassium; Death; Post-mortem.* By Julius A. Post, M. D., Rochester, N. Y.

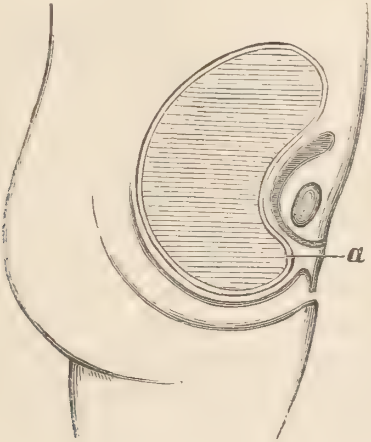
January 31st, 5 p. m. Was called to attend Mr. R., aged fifty-five. Found him laboring under symptoms of congestion of the brain; he died about half an hour after I first saw him. He followed the occupation of a jeweler, and was in the habit of using cyanide of potassium and gold with an alloy. The vapor of the cyanide of potassium, he said, always produced in him the symptoms of brain-congestion. *Post-mortem* examination, at 3 P. M., February 1st, showed the dura mater and arachnoid to be greatly congested. The pia mater was to all appearance perfectly normal, except an oval spot about an inch long by three-quarters of an inch wide, situated about one inch and a half above the internal occipital protuberance and one inch to the left. The internal surface of this spot throughout its whole extent was firmly connected to the surface of the brain, presenting the appearance of old inflammatory action. It did not penetrate the brain-substance, neither was it connected externally with the arachnoid. The arachnoid and dura mater immediately covering did not present evidence of any inflammatory action. This connecting substance presented the appearance of fibrous adhesions, and when dissected was found to be tough and to cut like cartilage. While dissecting this connecting link the knife struck a spicula of bone nearly half an inch in length and about the size of a medium pin-point; this particle of bone was firmly pressed upon the brain, but did not penetrate the brain-substance. There was no serum or blood in the ventricles. The cerebrum was slightly congested, but the substance presented nothing abnormal. The cerebellum was very much congested and quite soft. We also examined the contents of the chest and abdomen, but found nothing indicative of disease. The various organs throughout the entire body appeared to be in perfect health. The case is a particularly interesting one—1. Because of the action of the cyanide-of-potassium vapor producing congestion and probably death; 2. The adhesion of the pia mater to the surface of the brain; 3. The spicula of bone, which had undoubtedly been in that position for many years without producing cerebral troubles.

III.—*Case of Occluded Vagina with Retained Menses; Operation.*

THE following case occurred in the service of Dr. T. Addis Emmet, in the Woman's Hospital, New York:

The patient was a girl fifteen years of age, well developed, and florid in appearance. She had never menstruated, but for the past eight months had suffered pain, referred to the pelvic organs, at regular monthly intervals.

Physical examination showed the vagina to be either absent or entirely occluded. With a finger of one hand in the rectum and the other hand on the abdomen, a large fluctuating tumor—the distended uterus—could be distinctly felt, as shown in the adjoining cut.



Having placed the patient under ether, March 14, 1876, Dr. Emmet introduced one finger of the left hand into the rectum, and, having an assistant hold a metal sound passed into the bladder, proceeded cautiously with a pair of blunt-pointed scissors to divide the firm tissue (*a*) between the urethra and rectum. Partly by cutting, and partly by tearing with the finger, a depth of about an inch and a half was gained. A small trocar was then thrust into the uterus, and the escape of thick, black fluid confirmed the diagnosis. A large opening was then made and over a quart of fluid evacuated. The neck of the uterus could then be distinctly felt, by rectal touch, less than two inches from the anus. The cavity of the uterus was thoroughly washed out with hot water containing a little crude carbolic acid, and a closed glass plug was placed in the vagina to prevent union of the fresh surfaces.

Correspondence.

The Antiseptic Treatment of Amputations, Complicated Fractures, and other Extensive Wounds, in Prussia. By G. Farrar Patton, Senior Student of Medicine, University of Bonn, Prussia.

Bonn, *February* 25, 1876.

Editor New York Medical Journal:

Having just read a very interesting article from Dr. Frederick S. Dennis, of the Bellevue Hospital, published in the January number of this Journal, in which he calls attention to the highly-satisfactory results that have been observed in the wards of that hospital, in connection with the treatment of amputations by the "open method," I take the liberty of offering here a few remarks upon the same subject, in order to lay before the readers of the New York Medical Journal certain facts and data which may be considered interesting as tending to show how, in the practice of the leading German surgeons, results equally gratifying are secured by means of a different and perhaps less troublesome method of procedure. Having never had the opportunity of witnessing the plan of treatment so ably advocated by Dr. Dennis, of course I can only form an idea of the amount of trouble required in carrying it out; but it is self-evident that, in order to obtain the full benefit of the carbolized-water ablutions "applied at frequent intervals by means of an Esmarch's wound-douche," these intervals must be pretty short, and what with attending to this indication, changing the sheet-lint every few hours as the pus accumulates, and applying the balsam of Peru, the attention of an assistant will be constantly required by every patient undergoing the treatment. What is remarked about the discharge from an amputation-wound not becoming foul unless subjected to a warm temperature, such as that of the stump itself, is interesting; but it seems rational to conclude that, if it were not for the carbolic acid contained in the water with which the wound is washed, a process of decomposition would be very likely to result from the free access of air, at a temperature such as is usually maintained in hospital wards. Therefore, in order to guard against the dissemination of septic spores from these open deposits of purulent matter, it is evident that one would need to keep them well saturated with carbolic acid; and, to us who are in the habit of working with Prof. Lister's closed method, it seems far preferable to have all such discharges shut off from contact with the infectious atmosphere of the hospital. Before proceeding any further, however, I shall briefly describe the plan of treatment pursued in the surgical clinic of our university here. Prof. Busch, the director, is a warm advocate of the Lister theories, and so firm are his convictions with regard to the efficacy of the "antiseptic method," that he ranks its inventor as one of the greatest benefactors of the human race; he also claims that no single event in the history of surgery, except the introduction of chloroform, has done as much to extend the usefulness of the surgeon's art and to diminish the death-rate in operative practice. The antiseptic method of treatment, as carried out in Bonn, is as follows: Preparatory to every operation upon an extremity, the elastic bandage of Esmarch is applied, the patient having been first chloroformed; and in all operations the skin is thoroughly cleansed by means of soap-and-water applied with a brush. The instruments to be used are all laid in a shallow vessel containing carbolized water, and just before beginning the operation the surgeon washes his hands in water similarly prepared. These preliminaries attended to, two powerful streams of carbolized spray are directed upon the site of the operation, so as to thoroughly impregnate the air with an antiseptic substance, and in this fine mist the surgeon proceeds to make his incisions. In the "bloodless method" of Esmarch, of course no time is lost with having to stop and tie vessels, but, when operating upon the head or trunk, where the elastic bandage cannot be applied, arteries are secured with ligatures of carbolized catgut as they are reached, the plan being always to tie between forceps, by which means the hæmorrhage is reduced to a minimum. The operation done, and all the vessels having been secured with carbolized catgut ligatures (the ends of these ligatures are cut off quite short and left to be absorbed), one or more drainage-pipes of perforated rubber tubing are laid in the wound, and the whole is closed with interrupted sutures of silk. In large wounds, as when a limb has been amputated, a drainage-pipe is placed in either angle of the wound, a thread being put through the outer end of the tube to facilitate its subsequent withdrawal. These tubes having been cut off pretty short, and the edges of the wound brought together, a strip of oiled silk moistened with the carbolized water is next laid exactly over the line of junction as a "protective," and around the whole is folded an ample covering of very strongly-carbolized muslin. This latter is so doubled as to form a covering of eight thicknesses of the cloth, and it is to prevent the contact of the wound with this possibly irritating material that the protective strip of oiled silk is applied. Where the edges of this carbolized muslin envelope come, of course there is more or less space between it and the skin, through which the air might press in, carrying with it the dreaded spores of infection; and, to stop this passage, a layer of cotton impregnated with salicylic acid is placed all around, and bound down with narrow bandages soaked in the carbolized water. The whole is now enveloped in a sheeting of oiled silk, and this in turn bound down with muslin bandages, which completes the dressing. After the cotton is put on, the work of spraying is discontinued, as it is then certain that no air can get to the wound without first passing through the antiseptic media by which the stump or wound is surrounded. The apparatus by means of which the spray is produced is the simple and well-known "ether-spray" of Richardson. For the first five or six days this dressing is renewed under spray once every twenty-four hours, and after that, when the discharge begins to become more scanty, one dressing is permitted to remain for two or three days; and finally, when the danger of infection is no longer to be feared, this complicated arrangement is exchanged for a simple cloth laid lightly around. At every renewal of the dressing the drainage-pipes are drawn out, laid in carbolized water and thoroughly washed, and a small piece cut off from the inner end, so as to allow for the filling up of the wound with granulations. The manner in which these perforated rubber tubes perform their office of draining away the discharge from the interior of a wound is so perfectly satisfactory that nothing better could be desired for the purpose. The evil to which Dr. Dennis alludes as one almost inseparable from the closed treatment of wounds, according to the old method, viz., the formation of abscesses under the flaps, is one that is never known to occur where the drainage-pipes are used, and, as the one great advantage claimed for the open method is the free egress it allows to pus, I think it may fairly be said that, taking into consideration the obvious disadvantages attendant upon a plan that exposes a large wound for hours to the infectious air of a hospital, with only the protection afforded by occasional ablutions with carbolized water, the open method of treatment can hardly be compared with our closed one as above detailed, as regards convenience and absolute security. The evidence of reported cases brought forward to sustain the claims made for the open plan of treatment is certainly not to be overlooked, as it is abundant and conclusive; but, as a matter of principle, the idea of allowing the air of a ward, impregnated with more or less septic material, free access to a wounded surface, seems a wrong one. One cannot stand by with a *douche* and wash the wound every few minutes, and in the intervals there will always be a chance for floating spores to collect upon the exposed surface. Now, if the work of ablution is frequently and thoroughly performed, these spores will be washed away, or paralyzed *in situ*, before they can have passed into the circulation; but, supposing this work imperfectly performed, how much mischief might result before the notice of the attendants will be attracted by the patient's symptoms!—for, as is known, the septic poisons act on the principle of ferments, a small germ sufficing to set up an extensive general process. The fact is remarked that flies have not a disposition to deposit their eggs upon a healthy wound. This is unquestionably a weak point. To begin with, it is tacitly acknowledged by Dr. Dennis that there *is* something possibly to be apprehended from this quarter; and, granting that flies are *not* as strongly attracted by a healthly wound as by an unhealthly one, we must recognize the fact that, in a number of cases terminating favorably, the wounds in all may not have been uniformly healthy throughout, so that we are brought back to a question of deciding exactly what is to be understood by the terms healthy and unhealthy, or rather, as to what standard of health is required to insure immunity from the attacks of insects. Then it is to be doubted if this statement with regard to the habits of flies is strictly in accordance with every-day observations, but, in any case, it seems a weak point in practice to depend upon a supposed idiosyncrasy of any one species of insects for protection against so serious an evil as infection by their eggs—not the only source of danger to be apprehended, since it has been satisfactorily shown that flies carry infective material directly from one patient to another, by means of minute traces of humid matter that adhere to their feet. Therefore, I am disposed to think that the Bellevue Hospital surgeons are indebted rather to the assiduous use of carbolic acid and balsam of Peru, for the escape of those patients treated with the open wounds, than to any idiosyncrasy of their flies; and, as people are not as thorough-going in every part of the world, I believe that the general adoption of the open plan of treatment would not be likely to diminish the number of cases of septic fever in surgical hospitals. On the other hand, with the closed method, as practised in our Bonn clinic, no formation of abscesses is to be apprehended, no superfluous attention is required by the patient, the one dressing *per diem* being all that is necessary; the danger of septic infection is absolutely avoided, so that the surgeon can make his mind perfectly easy on that score, and, as the results of a vast number of cases show, only a mild grade of fever ever appears after the operation; and, as to inflammation and swelling in the wound, it would seem as if the dressing in question were actually a charm to insure against the development of these symptoms. I could (and will, if it is desired) give the records of any number of cases treated here by this closed method—thigh-amputations, resections, compound fractures, extensive operations for necrosis of bone, etc., etc.—all showing the most favorable results throughout that could be desired; and it is a settled fact that, since the adoption of this method in Bonn, erysipelas has completely vanished from the hospital wards. With a method that gives these results, and is susceptible of universal application—which is so easy to work, and which avoids every danger possible with the open method—what special advantage can be claimed for the latter? I submit the matter to the readers of this JOURNAL for consideration.

Proceedings of Societies.

BROOKLYN PATHOLOGICAL SECTION.

Stated Meeting, January 27, 1876.

DR. FRANK W. ROCKWELL presented a fœtus, with the following history: Mrs. A.,.being at about the sixth week of utero-gestation, was startled, while crossing the ferry, by the sight of a man with double club-foot; and, after much mental worry about the danger of "marking" her child, aborted, at the end of three weeks, the specimen shown.

It exhibited very marked distortion of both inferior extremities from the knees down.

The question of the relationship between the maternal anxiety and the malformation being raised, the general opinion of the members seemed to be that, admitting this to be a case of such relationship, it must be considered very exceptional, several instances being cited where "mothers' marks" might have been reasonably expected, but were not present.

Dr. MARTIN presented the lungs, kidneys, and a portion of the small intestines, removed from a woman who had suffered from chronic diarrhœa and phthisis, and who died very suddenly on the 26th of January, from profuse hæmorrhage from the mouth.

At the autopsy, made by Dr. Rushmore, a large cavity was found at the apex of the left lung, full of blood, and communicating with the left bronchus.

The left kidney weighed about two ounces, the right weighed four and a half ounces, and the parietal and visceral peritonæum was thickly studded with granulations, proved to be tubercular under the microscope.

Dr. MATHEWSON related the following history: Mrs. B., aged forty-seven, was first seen two years ago. She had fallen several years before, and had injured the bridge of the nose and the forehead very badly. She had never been well since, having suffered from frequent headache and dizziness, and finally failure of sight.

The ophthalmoscope showed double choked disks, and the diagnosis of intra-cranial tumor was made. She was given potassium iodide, and bromide, and drifted about from one practitioner to another, until her sudden death, January 17, 1876.

Dr. Shaw presented the brain removed at the autopsy.

The scalp and diploë were hyperæmic, and the cerebral sinuses were full of blood. A tumor, the size of a hen's-egg, arose from the dura mater on the orbital plate of the frontal bone on the right side, pressing upward and backward into the frontal lobe of the cerebrum, especially upon the inferior frontal convolution, which was soft and yellow. No aphasia existed. No hæmorrhages were found in the cerebral substance. A small spicula of bone, about three lines in length, passed upward from the orbital plate into the base of the tumor. There were double choked disks and flattened optic nerves. Heart was very fatty.

Dr. Mathewson spoke of the cases collected by Dr. Reich, who has found eighty-eight cases of intra-cranial tumors; eighty-two were associated with double choked disks, four with a single choked disk, and in two cases no lesion of the papilla was found.

Dr. Segur said the tumor had proved to be sarcoma, and called attention to Dr. Mathewson's diagnosis made years ago, and to the importance of ophthalmoscopic examinations in cases of suspected brain-lesion.

There was no increase of fluid in the ventricles or arachnoid space, and no direct pressure on the optic nerves, a point of importance with regard to the question of the method of production of choked disk.

Stated Meeting, February 10, 1876.

The Microscopical Committee reported that Dr. Hutchison's specimen of excised tongue was simply hypertrophy, no abnormal tissue being detected, and Dr. Giberson's case of tumor of lip proved to be epithelial in character.

Dr. SEGUR presented, with the following history, a stomach removed at the autopsy:

Mrs. C., aged sixty, residing in New York, was seen by Dr. Segur in consultation twice before her death. She had suffered from severe constipation with vomiting, apparently from intestinal obstruction, but her bowels had been moderately relieved once by a cathartic. When seen by Dr. Segur the abdomen was moderately distended, and felt firm to the touch all over. In the right hypochondrium, a pyriform swelling three inches long was easily felt, its neck passing up under the ribs. This was thought, by the attending physician, to be the distended gall-bladder; although Dr. Segur could not understand why it should remain so firm and unyielding to pressure.

Palpation over this tumor gave the impression of a distinct grating, as of gall-stones. The symptoms persisting, the patient ultimately died of exhaustion.

At the autopsy no tympanites was found. The small intestines were empty; the caput coli was greatly distended for four inches, then there was a sharp constriction, and the rest of the colon was entirely collapsed.

The gall-bladder was large and distended with five ounces of bile; no gall-stones were found. The bile-ducts were occluded, whether by pressure or inflammation was not made out. The mesentery was very peculiar, being fully half an inch thick, in consequence of a uniform infiltration into the tissue, the constriction of the colon being due to the contraction of this exudation around it. The stomach, according to the specimen presented, was very much thickened. The patient is said to have suffered for years from occasional attacks of intestinal obstruction similar to that from which she died.

Dr. COLGAN presented for Dr. Byrne a mamma removed this day at St. Mary's Hospital.

The patient was forty-seven years of age, had been married sixteen years, and had nursed all her children.

The breast commenced to enlarge six months ago, and had done so rapidly for the last three months. She has had no pain, no tenderness, no glands involved, and no impairment of health.

The specimens presented were referred to the Microscopical Committee.

On motion, the Section went into executive session.

NEW YORK PATHOLOGICAL SOCIETY.

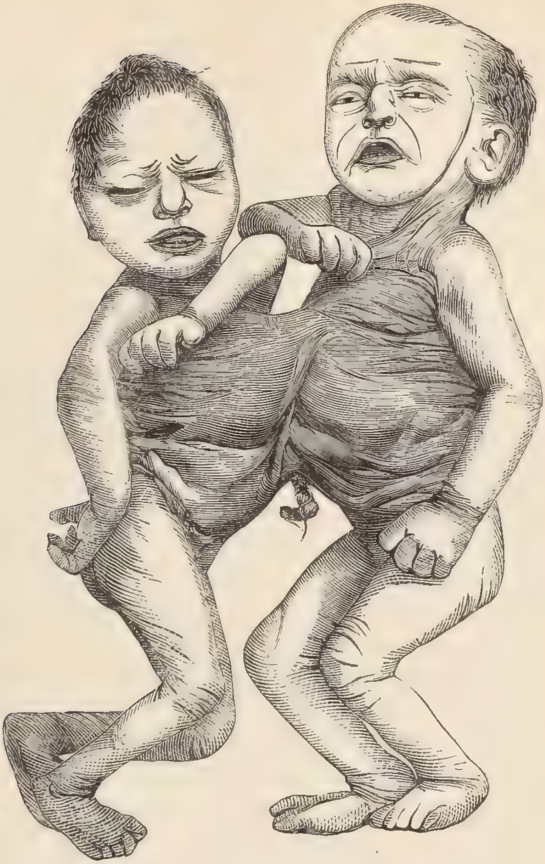
Stated Meeting, February 23, 1876.

DR. C. K. BRIDDON, President.

Analogue of the Siamese Twins.—Dr. JOHN ELLIS BLAKE exhibited to the Society a specimen of monstrosity which was apparently in nearly every respect similar to the *Siamese twins.* Dr. Blake was enabled to present the specimen through the kindness of the consul for Sweden and Norway, who obtained it for Prof. Nicholaysen, of Christiania, Norway. The twins weighed fifteen pounds, and were born at Tobasco, Mexico, and lived nine days. The father was a mulatto, the mother an Indian. One of the twins has the facial characteristics of the father, the other that of the mother. Both were girls. On examining the specimen it was noticed that the abdominal cavity of each was continuous, for when pressure was made on the abdomen of one the other became distended. The sternal bones seemed also to be connected by a cartilaginous band. There was a common umbilical cord for each, as shown in the engraving.

Dr. Blake remarked that the nature of the specimen in a practical point of view depended on the question whether the union was simply a fusion of the thoracic and abdominal parietes, or, as in the case of the Siamese twins, a union of the liver and other viscera. This point was of practical value, inasmuch as a case of the kind might occur at any time in obstetrical practice, and the question would arise as to the safety of dividing the connecting band.

In the case of the Siamese twins, and in all probability in the case presented, such an operation would have been fatal.



Dr. Blake said that when the specimen reached Prof. Nicholaysen a thorough dissection of it would in all probability be made.

Stated Meeting, March 8, 1876.

Dr. C. K. Briddon, President.

Addison's Disease; Strictures of Ileum.—Dr. R. E. Van Giesen, of Greenpoint, presented some rare specimens of pigmented viscera which he had removed from a patient suffering from what was supposed to be Addison's disease. The patient was a man fifty-seven years of age, a native of France. He had been in good health till recently, weighed one hundred and eighty-five pounds, and was six feet in height. Thirty years ago he had an attack of typhoid fever, followed by articular rheumatism, and since that time had an attack of diarrhœa every spring and fall. This diarrhœa was of a mild type, and readily yielded to the ordinary remedies. About two years and a half ago, he was seized with dysentery, but did not suffer from it for any length of time. During last year he was again attacked with articular rheumatism, and after recovery the skin became of a brownish color. Another noticeable feature of the case was, that with the discoloration of the skin there was a desquamation of the cuticle. During January and February, 1876, he was attacked with diarrhœa, attended with a mild attack of rheumatism and bronchitis. At this time Dr. Van Giesen was called to see the patient in consultation with Dr. Jenkins, the regular attendant. No individual organ seemed affected, and the opinion then formed was, that the patient was suffering from asthenia. Dr. Austin Flint saw the patient one week afterward, and concurred in the opinion previously given. During the following week death took place.

Post-mortem Examination.—The skin presented the same brownish discoloration that it did during life. The left lung was deeply pigmented on its surface, and on section calcific deposits were found, showing the cicatrization of an old cavity. No recent lesions could be detected. The right lung closely resembled the left, both in external appearance and internal lesions. The heart was pigmented, but in other respects normal. The liver was also pigmented ; it was attached by its upper surface to the diaphragm ; upon section it was found to be fatty, and to contain a cicatrix of glistening white color. The spleen was pigmented, small, and softened. The intestines were also pigmented, and presented several strictures ; the first stricture was situated in the ileum, about six feet from the pylorus ; the second stricture, one inch beyond this ; the third, about eight feet from the pylorus ; the fourth, about eleven feet from the pylorus. This last stricture was the most complete, and caused nearly complete occlusion of the gut. At the ileo-cæcal valve adhesions of the peritonæum were discovered, and near the appendix vermiformis an ulceration was found, but there were no perforation and no evidences of peritonitis.

The supra-renal capsules showed no evidences of degeneration, beyond pigmentation. The kidneys were pigmented, but otherwise normal.

Dr. Van Giesen, in reviewing the case, said it was difficult at the *post mortem* to tell what was the immediate cause of death, and equally difficult to decide on the cause of the strictures. In many respects the case, both clinically and pathologically, gave evidence of Addison's disease, but there was no change in the structure of the supra-renal capsules. No history of syphilis could be obtained. In answer to a question, Dr. Van Giesen said that there was no evidence appreciable to the naked eye of Peyerian lesions.

Dr. HEITZMAN had seen cases of intestinal strictures occurring in syphilitic children which closely resembled those presented by Dr. Van Giesen.

Dr. SATTERTHWAITE said that Rokitansky held the view that catarrhal inflammation of the intestines might result in stricture, but this view did not account for the ulcerations which were present.

Aneurism of the Abdominal Aorta.—Dr. VAN GIESEN also presented a specimen of aneurism, with the following history: A man thirty-five years of age had been under observation for the past five or six years, and during that time had been in good health. On January 29, 1876, he was sick for several days with colicky pains situated in the neighborhood of the bladder, but no disease of that organ could be detected. Opiates were given with only partial relief.

One week before death Dr. Van Giesen saw him in consultation, and, although the abdomen was closely examined, no disease could be found. The case progressed without much change, till one morning, when, on rising to take his breakfast, he fell back dead.

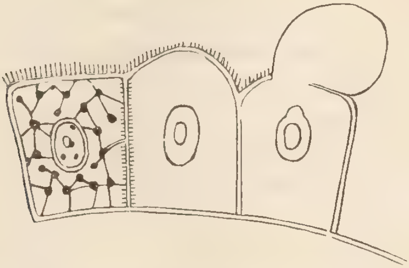
Autopsy.—The abdomen was found distended by the intestines, which also forced the diaphragm far up into the thoracic cavity. Beneath the intestines a large extravasation of blood was found, which filled the lower part of the abdomen. After the blood was removed a ruptured aneurismal sac was noticed at the junction of the thoracic and abdominal aorta. During life no evidence, either by auscultation or percussion, was found which would point to the disease from which the patient died.

Epithelioma and Sarcoma.—Dr. BRIDDON presented a small mass of epithelial cancer which he had removed from a patient upon whom he had operated about five months ago. The patient was aged seventy-four years, and during last October an epithelial growth was removed from the lip. Shortly afterward it began to return near the former site, and at the time of removal was tubercular in character and about three-quarters of an inch in diameter. Dr. Briddon had seen only one other case in which epithelial disease had so quickly returned, and that was in a patient suffering from epithelial cancer of the index-finger. In six months the disease returned, involving all the viscera in sarcomatous disease.

Dr. HEITZMAN said that the tendency to return in malignant growths of the face was indirectly in proportion to their position. The lower down they presented themselves the greater was their tendency to return. When an epithelial growth returned at an early date it was found that its elements were less perfectly formed than when its approach was more slow. He said the specimen presented by Dr. Briddon was more of the sarcomatous form of malignant disease.

Formation of Mucus; Difference between Mucous and Pus Corpuscles.—By permission of the PRESIDENT, Dr. C. HEITZMAN gave a short explanation of the formation of mucus, and the distinguishing signs between mucous and pus corpuscles. He said: "The production of mucus can be directly observed under the microscope on the epithelium of the intestine of recently-killed animals, by adding to the specimen a few drops of a dilute solution of chromic acid. When viewed under the microscope a section of the epithelium was as represented in the cut, the cylindrical cell-elements being protoplasmic bodies covered on all sides by a cloak of cement, and the free surface closely studded by small rods. The gran ules within the cell are connected by filaments and form the living matter. When the solution of chromic acid is added, the contents of the cell swell and distend the free surface till it bursts and pours forth what is called mucus. The nucleus of the cell formed the *mucous corpuscle.*"

FIG. 1.



In regard to the formation of the pus-corpuscle, Dr. Heitzman said that, when inflammation took place in the connective tissue, the increased flow of blood with the exudation so acted on the epithelial cells as to cause an increase of their contents, and at the same time changed the vesicular nucleus into a yellow and, apparently, structureless particle. While this change took place in the nucleus, similar changes occurred in the granules scattered throughout the cell, and caused them occasionally to reach the size of the nucleus. After these changes have occurred and the contents of the cell are thrown on the surface of the mucous membrane, we had the *pus-corpuscle.*

The main distinction between a mucous and a pus corpuscle was, that the former showed a hollow nucleus and a pale protoplasm, with the granules always small, while in the pus-corpuscle there are compact nuclei and coarse granules.

FIG. 2.

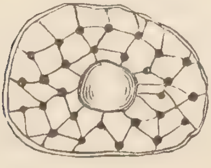
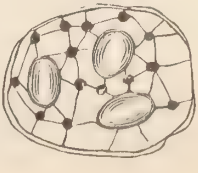


FIG. 3.



The amount of living matter within a pus-corpuscle varied with the vitality of the organism. Thus, those with a vitiated constitution yielded pus-corpuscles with a small amount of living matter, and, as the living matter gave the yellow color to the pus, it followed that pus obtained from such a source was serous, and had corpuscles with granules only slightly enlarged, and resembling to a certain extent mucous corpuscles.

Thus a microscopical examination demonstrated the vitality of the patient furnishing the pus.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Dr. Henry B. Sands, President.

Adjourned Stated Meeting, February 27, 1876.

Dr. F. N. Otis continued the discussion which he commenced at the last stated meeting. His remarks in full will be found in this number of the Journal.

Dr. R. F. Weir read a paper containing some original investigations on the same subject. The paper will be found in the same number of the Journal.

Dr. F. J. Bumstead said that, when he first heard of the peculiar views of Dr. Otis, he was inclined to consider them as being extreme, but after investigating them more thoroughly he had modified his original view, though he was still of the opinion that there were many doubtful points upon which more light was required.

In regard to a prevalent view that gleet was dependent upon stricture of the urethra, Dr. Bumstead said that he had seen cases where the stricture had been thoroughly overcome, and yet the gleet persisted. He was inclined to the view that the cause might be hyperæmia and other conditions of the mucous membrane, similar to what are found on other mucous surfaces where a chronic discharge existed.

In reference to the feeling of fullness which was described by the patient when the urethra-meter was introduced and dilated, Dr. Bumstead did not think it was a reliable guide, as many patients were very irritable and unreliable in describing their sensations. He agreed with Dr. Otis in taking the central part of the spongy portion of the urethra as the fairest estimate of the size of the canal, but he did not think that the size of the meatus was any index. He differed from Dr. Sands in respect to the treatment of strictures by dilatation, for in his experience internal urethrotomy was the most reliable method, and preferable even to divulsion. He had found that strictures sometimes recurred after the first operation, but, by repeating the operation a sufficient number of times, the contraction was overcome. In regard to the use of sounds, he did not consider twenty-five millimetres as being too large. In conclusion, Dr. Bumstead said he did not think that the truth had yet been arrived at regarding the limit to dilatation.

Dr. GEORGE A. PETERS said that, out of the one hundred cases reported by Dr. Otis, twelve of them had been examined by himself. At first he was opposed to the views of Dr. Otis, but, after making a number of observations, he was surprised at the uniformity of the results.

In the use of the urethra-meter he was guided more by his own sense of touch than by the sensations of the patient. He coincided with the views expressed by Dr. Bumstead in regard to the advantages of internal urethrotomy.

Dr. KEYES did not think that it was wise to be bound by any fixed rules in the treatment of cases, and was of the opinion that the whole truth of the matter was not yet arrived at.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 2, 1876.

DR. S. S. PURPLE, President.

Is Craniotomy, Cephalotomy, or Cranioclasm, preferable to Cæsarean Section in Pelves of from One and a Half Inch to Two and a Half Inches? With a Case of Labor in a Kyphotic Pelvis of One

and Seven-eighths Inch.—Dr. Isaac E. Taylor read an elaborate article on the above subject, which was a continuation of a paper read a few months ago before the Academy. The deductions which Dr. Taylor arrived at, after an extensive experience, were:

1. That a mutilated child could be delivered with safety to the mother through a pelvis measuring one and three-quarters inch antero-posteriorly, and two and a half inches transversely —the mode of delivery being by version after cephalotripsy or cranioclasm had been practised.

2. That the Cæsarean section should not be performed when the space was as stated above, unless some other complications presented themselves.

Dr. Taylor in his paper presupposed that craniotomy had been performed, and confined his remarks to the method of delivery after this operation. The only exception to this was when, in some cases, the feet presented, he delivered the lower extremities, body, and arms, and then perforated the cranium, and, with the face posteriorly, introduced the blunt-hook into the orbit, and by firm traction delivered the head, an assistant making steady pressure over the uterus.

Dr. Taylor also recited the history of a case in which he delivered a child weighing eleven pounds from a patient with a pelvis of one and seven-eighths inch antero-posterior measurement. When delivery was begun, the os uteri was of about the size of a five-cent piece. The first procedure was to introduce Dr. Taylor's narrow-bladed forceps, and retain the head of the child in contact with the cervix both during and after a pain, until free dilatation took place. The head was then perforated and the brain evacuated. Firm pressure was made over the abdomen of the mother, and the head partly forced into the cavity of the pelvis. The cephalotribe was then applied, and the vault of the cranium crushed. The right-angled blunt-hook was then inserted into the base of the cranium, and the head dragged down till it partly protruded from the vulva. An embryotomy-forceps, three inches longer than Dr. Meigs's, was passed, one blade within the head, and another blade without, and in this manner delivery was accomplished without difficulty. Slight *post-partum* hæmorrhage took place, which was soon controlled. The patient passed on to a good recovery, and in two or three weeks was able to walk about.

Dr. Pallen remarked that the great bane of obstetrical practice was, the tendency to follow custom. He would prefer, in a pelvis of less than two inches, to deliver the child either by Cæsarean section, or by the supra-pubic operation practised by Prof. T. G. Thomas. The dangers to be apprehended from Cæsarean section were: hæmorrhage, non-union of the uterine walls, and the entrance into the uterus of folds of the intestines.

Dr. Thomas's operation consisted in making an incision from the anterior superior spine of the ileum to the pubis, and avoiding the bladder and the peritonæum as the section passed down to the cervix. The child was then delivered through this opening without any serious risk of bleeding.

Dr. Pallen was of opinion that Dr. Thomas's operation would, if practised in proper cases, change materially the statistics of mortality. In regard to the views advanced by Dr. Taylor, he was of opinion that the matter was still *sub judice*.

MEDICAL LIBRARY AND JOURNAL ASSOCIATION.

Stated Meeting, March 3, 1876.

Dr. E. G. Loring in the chair.

Peri-Nephritic Abscess in Children; Report of Nine Cases.—Dr. J. P. Gibney read an interesting paper on the above subject, giving the details of nine cases which came under his observation at the Hospital for Ruptured and Crippled. Seven of these cases resulted in suppuration and two in resolution, but in none of them did death take place. The special interest of the paper was in regard to the diagnosis of the disease, and the impossibility, or nearly so, of distinguishing it from caries of the spine and disease of the hip-joint. It was still further enhanced by the great scarcity of literature on the subject either in the English or other languages.

The first case was aged eight years, and entered hospital

July 16, 1873. The illness began on June 1st, with pain in the left knee, which subsequently involved the hip. This pain, together with a small amount of fever, was all that the parents of the child could notice. When examined in hospital the patient could neither stand nor walk. There was enormous swelling of the left gluteal region, which extended beyond the crest of the ileum. The thigh was semiflexed on the pelvis, and, on making extension, severe pain was caused. Shortly afterward the swelling extended down the thigh, and, after pointing, opened spontaneously. After six months, recovery was perfect. The diagnosis made in this case was suppurative synovitis of the hip-joint, but the after-history of the case proved the error of the diagnosis, and showed that the abscess must have had its origin in the cellular tissue below the kidney.

The second case was that of a boy aged one and a half year. When he was seen at the hospital there was a fullness in the right lumbar space, and the thigh was flexed on the pelvis nearly at right angles, and, on making extension, severe pain was complained of. The only history that could be obtained was that the child was sick and cross for three weeks when the tumor appeared. In one week after its appearance it filled the whole of the costo-iliac space and pointed. When the abscess was opened a pint of pus escaped. In a month the child was quite well.

The third case was six years of age. No previous history could be obtained beyond the fact of pain being felt in the right lumbar region, which secondarily involved the hip. On examination, fullness was found in the lumbar region. The thigh was semiflexed. This case did not suppurate.

The fourth case was nine years of age. Swelling was found in the right lumbar region near the vertebræ. Both thighs were flexed on the abdomen. Suppuration took place, resulting in partial recovery, but this was followed by another abscess and complete cure.

The fifth case was three and a half years of age. When seen the body was bent forward to such an extent as to allow of the knees being used as a rest by the hands ; a swelling was found over the crest of the right ileum. This abscess opened spontaneously and resulted in complete cure.

The sixth case was two and a half years of age. The right thigh was flexed, and above the crest of the ileum an abscess existed, which was evacuated. Complete recovery ensued.

The seventh case was six years of age. Great pain was complained of; no flexion of the thighs existed, but a large abscess was found in the right lumbar region. Three weeks after the pus was evacuated the patient convalesced.

The eighth case was aged ten years. When first seen there was flexion of the leg, with swelling in the left vertebral groove; afterward a distinct tumor made its appearance, which opened internally.

The ninth and last case was two years of age. The leg was flexed upon the thigh. An abscess was found over the left vertebral groove near the sacro-iliac junction. The abscess was opened, and the patient passed on to complete recovery. This case was particularly hard to differentiate from caries of the vertebræ.

Dr. Gibney said he was unable to make a diagnosis in more than one-half the cases recorded, owing to the likeness which they presented to disease of the vertebræ and of the hip-joint. The symptoms, which were more or less observable in all of the cases, were first a rigor, followed by pain in the lumbar region; afterward immobility of the spine was an important sign, and in a week spasm of the psoas muscle, causing flexure of the thigh, was observable. In regard to the diagnosis, this disease differed from perityphlitis in the fact that the abscess appeared posteriorly and not anteriorly. Hip-joint disease extended to a greater length of time before suppuration took place, and moreover, if it has been carefully watched, it will give a history of successive stages. In caries of the spine there is usually found deformity; but in one of the cases reported the cellulitis around the abscess had the appearance of commencing kyphosis. To sum up, it may be said that, when an abscess or swelling appears in the lumbar, ischial, or femoral region, two or three weeks after the patient has been in perfect health, a diagnosis of peri-nephritic abscess may be strongly suspected. In respect to the treatment it may be said that, in the event of an abscess forming, the indication is to evacuate it, and support the patient by appropriate measures.

Stated Meeting, March 10, 1876.

Dr. F. S. Foster in the chair.

Merits of Different Forms of Galvano-Caustic Apparatus.—Dr. Piffard read a paper on the above subject, which appears elsewhere in the Journal. The paper was followed by an experimental test of the relative powers of the battery of Dr. Piffard and that of Dr. Dawson. It was apparent that with either battery the platinum knife or wire could be easily maintained at the requisite temperature. Dr. Dawson's battery responded more quickly and satisfactorily to the rubber slide than Dr. Piffard's did to the injected air; and with the same surface of platinum it certainly gave a more intense heat. It had also the advantage of generating less heat in the exciting liquid, owing, as claimed by Dr. Dawson, to the border of lead surrounding the plate of platinum. The experiments were highly interesting.

Bibliographical and Literary Notes.

Art. I.—*Lectures and Essays on the Science and Practice of Surgery.* Part II.[1]—*The Physiology and Pathology of the Spinal Cord.* By Robert McDonnell, M. D., F. R. S. London: Longmans, Green & Co.; Fannin & Co., 41 Grafton Street, Dublin.

This book comprises four lectures on the physiology and pathology of the spinal cord, which we will call excellent. In the first, which is chiefly critical, the author, after recording the theories which were held by different authors up to the time when Brown-Séquard's discoveries came to change some of our very fundamental knowledge about the spinal cord, proceeds to expose the views of Brown-Séquard, which have gained the assent of all physiologists and clinicians except Brown-Séquard himself, who believe that sensitive impressions travel in a crossed way through the central gray matter of the spinal cord, and that the decussation of conductors takes place all along the medullary axis. In this lecture is given with a great deal of clearness the theory of recurrent sensation as propounded by Brown-Séquard, for we must say here, once for all, that Dr. McDonnell adopts the doctrines of this eminent physiologist in all points except the *main one*, of which we shall speak later. This theory of recurrent sensibility is a very ingenious one, and, as it is very little known, we shall take the liberty of introducing it here. It is well known that if the nerve of a so-called rheoscopic frog be placed on the muscles of another leg so prepared, and the nerve of this last excited, a contraction ensues, which is followed by the contraction of the second leg; whatever may be the true explanation of the phenomenon, it is certainly due to some galvanic change in the muscle which, by its contraction, thus excites the nerve lying on it. Dr. Brown-Séquard thinks that this change in the galvanic state of a muscle is in the natural condition (we give Dr. McDonnell's own words) perceived by the sensitive nerves of the muscle; and the delicate perception of this galvanic change accompanying muscular contraction, however slight, gives to us a corresponding delicate appreciation of the feeling of weight, which is one of the most striking phases of the so-called "muscular sense." Of course, if the muscular contraction be very violent, or if the centripetal nerves of muscle be in a hyperæsthetic state, pain results, and hence that accompanying spasm and cramp. The experiment performed by Brown-Séquard to support this view is as follows: When we attach to the tendon of a muscle of the frog a weight capable of entirely preventing the contraction of the muscle which is fixed by its other extremity, it is found that every time the muscle *tends* to contract there is contraction of the muscle of the rheoscopic frog of which the nerve lies upon it. This shows that it is not necessary for muscle to contract in order to produce in a nerve in contact with it a galvanic excitation. And, if a greater resistance is opposed to the contraction of the muscle, the galvanic excitation which it gives to the nerve in contact with it is also greater. Matteucci has shown that, in this experiment, if the tendon of the muscle be released, the contraction takes place in the muscle, but no longer in the other rheoscopic leg.

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[1] Part I. treats of venereal diseases, and contains some remarkable lectures on the treatment of syphilis.

The next point of originality in the book, and the one upon which the author differs radically from Brown-Séquard, whose ideas he seems to have been propounding not unsuccessfully, is thus summarized: a new theory of nervous action as regards transmission of sensation along the nerves.

As is well known, Brown-Séquard teaches that there are, besides the four different nerves, motor, sympathetic, and sensitive, and sensory, eleven others, which transmit sensations of heat, cold, etc., etc. Dr. McDonnell does not accept this view. He advocates "simply an application of the theory of wave-propagation to the passage of various sensations along nerve-conductors." He "conceives that the various peripheral expansions of sensitive nerves take up the undulations or vibrations, and convert them into waves capable of being propagated along nervous tissue (neurility, Lewes). Thus the same nerve-tubule may be able to transmit along it vibrations, differing in character, and hence giving rise to different sensations; and consequently the same nerve-tubule may in its normal condition transmit the wave which produces the idea of simple contact, or that which produces the idea of heat; or, again, the same nerve-tubules in the optic nerve, which propagate the undulations of red, may also propagate in normal vision those which excite the idea of yellow or blue, and so for the other senses." This theory is certainly exceedingly ingenious; but, perhaps, too much so to be well founded upon what is observed in pathological observations and experimental researches. We may say, *en passant*, that the most striking and convincing proof that one and the same nerve conducts sensation and motion, was given by Vulpian and Philippeaux, who joined together the sectioned extremities, the central of the one to the peripheric of the other, of the lingual and hypoglossal nerves, in dogs. They found that by this means a sensitive nerve could be made a motor one. But Vulpian has himself very lately demonstrated that there is a source of fallacy in the experiment. When the chorda tympani has been cut beforehand, irritation of the lingual no more gives rise to contraction in the tongue. This critical experiment, we believe, is a solid proof that the same nerve does not conduct impressions of sensation and of motion, just as the curious experiment of Brown-Séquard on Guinea-pigs rendered artificially epileptic, and which develop what he has called the epileptogenic zone, which is not sensitive to pricking or pinching, but readily responds to gentle tickling, such as we can conceive is necessary only to awaken reflex action.

The other lectures of the book treat of the application of physiology to pathology, the facts there reported being chiefly those belonging to the history of the sympathetic nervous system, the development of epilepsy in animals by section of the spinal cord or sciatic nerve, and the influence of the nervous system generally upon nutrition. As these subjects are mostly familiar to all students of neurology, we will say that, if they want a clear and masterly exposition of the facts upon which all the *savants* are generally agreed, they should read Dr. McDonnell's book.

Art. II.—*Phthisis: its Morbid Anatomy, Etiology, Symptomatic Events and Complications, Fatality and Prognosis, Treatment and Physical Diagnosis. In a Series of Clinical Studies.* By Austin Flint, M. D., etc. 8vo, pp. 446. Philadelphia: H. C. Lea, 1875.

The work bearing the above title furnishes us with the results of the vast experience of Dr. Flint, comprising an analysis of 670 cases of pulmonary consumption. This number, of which the author has preserved notes, is but a small part of the cases which he has observed, especially during the past few years.

Dr. Flint is one of those who is satisfied only with personal investigation; he is exceedingly fair in argument, and remarkably apt in analyzing cases. We will notice briefly a few points brought out by the analysis:

In respect to *pathology* the author disclaims anything original in microscopical research, presenting clinical histories associated with *post-mortem* appearances visible to the naked eye.

Dr. Flint's cases suggest the view that the miliary tubercle or gray granulation precedes the inflammatory and cheesy products; and he takes occasion to criticise the statement of Niemeyer, that "the greatest danger of consumptives is, *that they are apt to become tuberculous.*" We are not able to give an abstract of the argument, but will venture to express our concurrence with the author's view, it being similar to that given by Rindfleisch in Ziemssen's "Cyclopædia," to which we gave our assent when noticing the same.

As regards causative influences, an *in-door occupation* seems to be the most potent. The influence of an antecedent *bronchitis* is spoken of as follows (page 61):

> "What is the conclusion to be drawn from the facts contained in my histories? Evidently, the conclusion is, they contain no evidence whatever that bronchitis has a causative influence in the development of phthisis. With a single exception, in no instance do the characters of the cough, at its commencement, show that bronchitis existed as an antecedent affection. . . . Let a physician be satisfied that his patient has nothing more than a bronchitis or a common cold, and he feels no anxiety as to danger of consumption. Let it be decided that cough and expectoration, however protracted, be the symptoms of only a chronic bronchitis, and there may be danger of asthma and emphysema, but phthisis is not to be apprehended."

The analysis favors the inference that *pregnancy* exerts "a considerable influence in the etiology of phthsis" (page 68); but "pregnancy does not appear to exert an unfavorable influence" (pages 178, 179) on the progress of tuberculosis, provided the pregnancy occurs consecutive to the development of the disease.

So far as the result of different methods of *treatment* is noted, special medicines have apparently but little effect. General hygienic measures, such as out-of-door occupation and the use of proper nourishment (including cod-liver oil), are of decided advantage. Alcoholics, in a certain proportion of cases, seem to exercise a beneficial effect. This plan of treatment is attended with arrest in a fair proportion of cases.

There are other points to which we should allude had we space at command. We trust the book will be very generally read, as it will be found a valuable result of laborious preparation.

Art. III.—*Diseases of Modern Life.* By Benjamin W. Richardson, M. D., M. A., F. R. S., etc., etc. 12mo. Pp. xii.–520. New York: D. Appleton & Co., 1876.

This may be considered a systematic treatise on sanitary science. It is divided into three parts, namely: I. "Phenomena of Disease, Incidental and General;" II. "Phenomena of Disease, Induced and Special;" and III. "Summary of Practical Applications."

Parts I. and II. are very comprehensive, especially the latter, in which the author discusses in a very scientific manner the influences and action of the various circumstances which tend to exert a deleterious effect upon the health, and in the causation of individual diseases. The author's design is to make the instruction intelligible to the general reader. In this he succeeds, and throughout these parts the practical deductions are apparent. He shows among other things the deleterious effects of tobacco and alcohol when used habitually. In respect to the *primary* action of the latter, Dr. Richardson thinks the so-called stimulant action on the heart is merely a depressing or paralyzing effect on the vessels, thereby allowing the heart to act with less resistance, so that at no time does alcohol act as a stimulant in its true sense. Nor does he think it ever acts as food; and he would appear to restrict its medicinal employment to a very limited number of cases. On this subject the opinions of the author will be more acceptable to the advocates of total abstinence than to those who approve of a temperate use of alcoholic beverages.

Part III., although condensed, contains many excellent maxims for the guidance of all. We know of no work of the kind so well adapted to the wants of the intelligent public as is Dr. Richardson's; and we consider it an excellent book for the use of the profession also.

Art. IV.—*Transactions of the Pathological Society of Philadelphia.* Vol. V. Containing the Report for the Year 1874, and from January, 1875, to July, 1875. Edited by James Tyson, M. D., etc. 8vo, pp. xxiv.–258. Philadelphia: J. B. Lippincott & Co., 1876.

It will be next to impossible for any member of the medical profession to study the "Transactions of the Pathological Society of Philadelphia" without gaining information which may prove a decided and genuine contribution to his knowledge of the relations diseases bear to each other, as well as to his professional acquirements generally. Vol. V., covering the period of one and a half year, is no exception. The cases published illustrate diseased processes in every part of the system, and are presented by gentlemen of established reputation as pathologists.

The volume corresponds in typography and beauty of style with Vol. IV.

Books and Pamphlets Received.—Vital Motion as a Mode of Physical Motion. By Charles Bland Radcliffe, M. D., Fellow of the Royal College of Physicians of London, etc. London: Macmillan & Co., 1876.

Massage in Amenorrhœa and Dysmenorrhœa. By Douglas Graham, M. D., of Boston. Reprinted from the *Boston Medical and Surgical Journal*, February 10, 1876.

Outline Drawings for recording the Situation and Form of Cases of Skin-Disease, and for noticing their Progressive Changes under Treatment. Arranged by Balmanno Squire, M. B., London, Surgeon to the British Hospital for Diseases of the Skin. London: J. & A. Churchill, 1876.

Fifty-fifth Annual Report of the New York Eye and Ear Infirmary. For the Year 1875.

On Stethometry. Being an Account of a New and more Exact Method of measuring and examining the Chest, with some of its Results in Physiology and Practical Medicine. Also an Appendix on the Chemical and Microscopical Examination of Respired Air. By Arthur Ransome, M. D., M. A. (Cantab.), Examiner in Anatomy and Physiology in the University of Cambridge, etc. With Illustrations. London: Macmillan & Co., 1876.

The Cause of the Commencement of Parturition. By Charles M. Crombie, M. B., M. C., Fellow of the Obstetrical Society of London, etc. London: J. & A. Churchill, 1875. Pp. 38.

Medico-Legal Evidence of Independent Life in a New-born Child. By J. B. Gaston, M. D., Montgomery, Ala. Extracted from the *American Journal of Medical Sciences*, January, 1876.

Eighth Annual Report of the New York Orthopedic Dispensary and Hospital, 126 East Fifty-ninth Street.

Filth-Diseases and their Prevention. By John Simon, M. D., F. R. C. S., Chief Medical Officer of the Privy Council and Local Government Board of Great Britain. First American edition. Boston, Mass.: James Campbell, 1876.

First Annual Report of the Board of Health of the State of Georgia, for the Year ending October 12, 1875. Atlanta, Ga., 1876.

Mammitis and Mammary Abscesses treated by Bandaging. By L. A. Dugas, M. D., LL. D., Professor of Surgery in the Medical College of Georgia. Read before the Medical Association, April, 1875.

Remarks on Intra-Uterine Polypi, with Special Reference to their Diagnosis and Surgical Treatment. By A. Reeves Jackson, A. M., M. D., Surgeon-in-Chief of Woman's Hospital of the State of Illinois. Reprint from *Chicago Medical Journal and Examiner*. 1876.

Archives of Ophthalmology and Otology. In Conjunction with Dr. E. Gruening, New York, and Dr. A. J. Blake, Boston. Vol. V., No. I. New York: William Wood & Co., 1876.

Remarks on the Curability of Inflammation. By L. A. Dugas, M. D., Augusta. Read before the Library and Medical Association of Georgia. 1876.

A Series of American Clinical Lectures. Edited by E. C. Seguin, M. D. The Principle of Physiological Antagonism as applied to the Treatment of the Febrile State. By Roberts Bartholow, M. A., M. D., Professor of Theory and Practice of Medicine and of Clinical Medicine in the Medical College of Ohio. Vol. II., No. I. G. P. Putnam's Sons. 1876.

A Lecture delivered before the Ladies of the School for Nurses. By Dr. F. N. Otis, Professor of Venereal Diseases, College of Physicians and Surgeons, Visiting Physician to Charity Hospital, New York. 1876.

Annual Report of the Directors and Medical Board of St. Michael's Hospital, Newark, N. J. January 1, 1876.

The Treatment of Scrofulides (Lupus). By Henry G. Piffard, A. M., M. D. Reprint from the *Practitioner*, December, 1875. New York: Macmillan & Co., 1876.

Physician's Combined Call-Book and Tablet. By Ralph Walsh, M. D., Washington, D. C.

On the Arrow-Poison in Use among the Ainos of Yezo. By Stuart Eldridge, M. D. Read before the Asiatic Society of Japan. January 19, 1876.

A Treatise on Surgery, its Principles and Practice. By T. Holmes, M. A., Cantab., Surgeon to St. George's Hospital, with Four Hundred and Eleven Illustrations, chiefly by Dr. Westmacott. Philadelphia: Henry C. Lea, 1876. 8vo, pp. 960.

Extract from the Ninth Annual Report of the State Board of Charities of the State of New York, relating to the Bearing of the Sanitary Condition of Towns, and the Crowding of Population into Filthy and Ill-ventilated and Badly-drained Tenement-Houses, upon the Increase of Pauperism. By Henry L. Hoguet and A. A. Low. Transmitted to the Legislature, January 14, 1876. Pp. 32.

Insanity in its Medico-Legal Relations. By A. C. Cowperthwait, A. M., M. D. Philadelphia: J. M. Stoddart & Co., 1876. Pp. 80.

The Effects of Small Doses of Mercury in modifying the Number of the Red-Blood Corpuscles in Syphilis. A Study of Blood-Counting with the Hématimètre. By E. L. Keyes, M. D., Adjunct-Professor of Surgery in Bellevue Hospital Medical College, etc. With Two Woodcuts. Reprinted from the *American Journal of Medical Sciences*, January, 1876. Pp. 23.

Notes on the Pathology of the Lymphatic Nervous System. By T. Edward Clark, M. D., Ph. D., New York. Reprinted from the *Journal of Nervous and Mental Disease.*

The Eighty-sixth Annual Report of the Board of Trustees of the New York Dispensary, January, 1876. Pp. 32.

Thirty-third Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages, and Deaths in the Commonwealth, for the Year ending December 31, 1874. Boston: Wright & Potter, 1876. Pp. 80–clxii.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. EDWARD FRANKEL, AND E. H. BRADFORD.

SURGERY.

An Experiment on Antiseptics. By M. S. BIDWELL. [American Journal of Pharmacy, March, 1876.]

NOVEMBER 15, 1875, a number of wide-mouthed eight-ounce bottles were prepared, each containing four ounces of water, and one-quarter of an ounce of raw, lean beef. One of these was left without any addition; twenty of them were arranged in sets of four, and to each bottle was added one, two, three, and four grains respectively, of each of the antiseptics under trial, which were carbolic acid (or phenol), salicylic acid, chloral hydrate, and benzoic acid. Four sets of bottles were thus occupied. The recent statement that the alkaline salicylates have no antiseptic power, coupled with the well-known fact that putrefaction is usually accompanied by an alkaline reaction, suggested the fifth series, containing the same quantities of salicylic acid as in the other series, with the addition of half a drachm of dilute hydrochloric acid to each bottle. Finally, to the twenty-second bottle was added the same amount of hydrochloric acid alone, for comparison. The whole were loosely covered to exclude dust, and set away at the usual temperature of the store, varying from perhaps 55° to 70°. From pressure of business, but little attention was paid to them, and no record was kept of their progressive changes; but, seven weeks later (January 3, 1876), they were all examined. The following were found more or less putrid, with an offensive ammoniacal odor, much like that of stale urine, viz.: The phenol, one, two, and three grains; salicylic acid the same; benzoic one grain, and all those containing chloral. In the three containing salicylic acid, the liquid was covered with a thick coating of mould, which was not the case with any of the others, illustrating the fact, which had been previously noticed, that a very small amount of this acid not only does not prevent, but even seems to favor the growth of mould. The bottle containing no antiseptic was, of course, quite offensive, but was not mouldy. The following were free from odor, and apparently unchanged, viz.: All that contained salicylic and hydrochloric acids combined, the two, three, and four grain benzoic acid, the four-grain phenol, which still preserved, as at first, its slightly carbolic or tarry smell. In all these the water remained clear, or nearly so, the meat having a whitish color and a soaked look. In the sample to which hydrochloric acid alone had been added, the water was clear and inodorous, but had a white, translucent substance, something like coagulated albumen, floating in it. No microscopic examination was made.

From the results of this experiment may be fairly deduced the following conclusions, subject, of course, to correction by further observations:

1. Of the four antiseptics mentioned, benzoic acid is effective in the smallest quantity, phenol and salicylic acids coming next, and being about equal; while chloral hydrate, at least in the ratio of one part in 500, has little or no permanent value.

2. Salicylic and hydrochloric acids combined are more effective than either of the four mentioned. How much of this effect may be due to each, and how much to the combination, could only be determined by further trial, as also how small a quantity of hydrochloric acid would be required. In this experiment, it will be noticed that this was used in about four times the largest quantity of the other agents, as it was not expected to act as an antiseptic, but only to aid the salicylic acid, preventing its extinction by the alkaline products of putrefaction. Yet, if so small a proportion (less than one per cent.) of this acid could so effectively retard decomposition, the fact might sometimes be used with advantage, as it would in many cases be convenient and unobjectionable.

One such experiment, of course, settles nothing; but these results are given for what they are worth, with the hope that others may extend and verify or correct them. The effect of the hydrochloric acid in this case was certainly unexpected by the experimenter, and would seem to suggest further investigation. It will be noticed that the failure of the chloral in this experiment does not at all conflict with the results reported by T. Roberts Baker to the American Pharmaceutical Association at the last meeting, as the weakest solution that he found efficient was five grains to the fluid ounce, or twenty-five times the strength of any used in this case, while he found that two-grain solutions only retarded decomposition without permanently preventing it.

Aneurism of Anterior Tibial cured by Injection of Perchloride of Iron.—M. Denucé reported the case to the Surgical Society of Paris, of a man, forty-five years old, who, in the effort to avoid a wagon, twisted his right foot. After the swelling of the injury had disappeared, a pulsating tumor, about the size of a small nut, remained at the ankle. Pulsations of the artery were easily recognized above and below the tumor; slight bruit in the tumor, which disappeared on pressure. Digital compression was tried for ten days, but caused pain; the artery above and below was then compressed, and several times the author thought that cure had resulted, when the pulsations reappeared. The fingers were replaced by compresses and the tumor hardened, but inflammation of the skin at the compressed points interdicted further treatment by this method. By means of an hypodermic syringe, seven drops of a solution of perchloride of iron, one to fifteen, were then injected into the tumor. During the injection two assistants compressed the artery above and below the tumor. When the liquid entered the aneurysmal sac, the patient complained of cramps in the calves and pain in the foot. Digital compression was stopped, and the aneurism gradually diminished during the following days. The cure was complete, and only a small induration remained at the site of the tumor. The author attributes the cramps and pain during the operation to the passage of some coagulated blood into the artery in spite of the compression.—*Lyon Médicale.* E. F.

Backward Dislocation of the Thumb.—M. Farabœuf (*see Gaz. Hebdom.*, December 17, 1875) has made a series of anatomical investigations on backward dislocation of the thumb. The main obstacle to the reduction, which in certain cases is so difficult, is, according to M. Farabœuf, the reversal on the dorsum of the metacarpus of the sesamoid bone. In these difficult cases the phalanx lies on the metacarpus grasped by the flexor muscles. The head of the phalanx on extension, being pulled forward, will twist the tendons and reverse the sesamoid bone. To reduce this dislocation the thumb should be flexed (the first phalanx being flexed as well as the second) and pulled over the head of the metacarpus, pushing the sesamoid bone before it. E. H. B.

Tubercular and Syphilitic Diseases of the Lungs.—M. Fournier, in a number of lectures reported in the *Gaz. Hebdom.*, December, 1875, speaks of the importance of the diagnosis between tubercular and syphilitic disease of the lungs. The diagnosis is often not made, and patients are allowed to die as tuberculous, though they could have been saved if treated for syphilis. The clinical history of syphilitic phthisis closely resembles that of the ordinary form, hæmoptysis not being as rare as is usually stated; though this symptom is not as common as in the other variety. The progress of the disease is usually very slow, and in some cases the disease remains latent for a long time, in others the general health is not affected in proportion to the severe lesions in the lungs. That this is the rule, as stated by some authorities, M. Fournier denies. A large number of patients suffer from as severe disturbance in nutrition as in tubercular phthisis. Syphilis should, therefore, always be thought of as possible, in forming a diagnosis of phthisis. As helps in the diagnosis the following facts are mentioned: Pulmonary syphilis is oftener unilateral than bilateral. The lesions are generally more circumscribed than in ordinary consumption. A deposit in the lungs, found on physical examination to be well advanced in disease, but limited in size, should attract suspicion. The seat of the syphilitic deposit in the lungs is as likely to be developed at the base as at the apex of the lung. In pulmonary syphilis the flattening of the chest and the clubbed fingers of consumption are not observed. If a patient has presented marked signs of pulmonary lesion for a long time, a year or more, without great injury to his health, syphilis is to be suspected. The organism tolerates the syphilitic deposit much better than the tubercular. As there are no pathognomonic signs, however, the diagnosis is sometimes impossible. This should be borne in mind in the treatment, which, where syphilis is suspected, should be iodide of potash and mercury, with general tonics. The prognosis is usually favorable if the patient's condition is not too low. Cases have recovered where undoubted cavities existed in the lung. E. H. B.

Treatment of Diseased Joints by Sulphuric Acid.—In a paper published in the London *Lancet* of May 28, 1870, Mr. Pollock first directed the attention of the profession to the beneficial effects produced by sulphuric acid in the treatment of caries and necrosis. The manner in which it is employed is twofold—either to touch the diseased bone with a glass brush or rod dipped in the strong acid; or to use a mixture of one part of acid with from one to six parts of water, and either syringe it into the cavity of the bone, or place some lint, soaked in the lotion, upon the surface of the necrosed portion.

The results of this mode of treatment were so favorable as to lead Mr. Warrington Haward, in 1871, to try its effects on the carious articular ends of the bones, and the suppurating synovial membrane of the knee-joint, in a child under his care. The plan adopted is to lay the joint open freely, and clear it out by passing strips of dry lint through it, so as to get rid of the coating of lymph and pus; then the joint is filled with lint soaked in a mixture of one part of sulphuric acid with two of water. By this means the pulpy synovial tissue is destroyed, and so also are the layers of cartilage and carious bone (if existing) on the articular surfaces of the bones. As a rule, the local application is followed in a few days by a slough of the surfaces, and parchment-like fragments come away through the openings into the joint. Both Mr. Pollock and Mr. Haward consider that when a joint is suppurating the amount of pus is at once lessened by the local application, while it is seldom that any serious constitutional or local disturbance is produced by it. In fact, the acid very soon converts an unhealthy, pus-secreting surface into a healthy, granulating one, and in a very short time appears to relieve constitutional irritation.

The cases which seem most suitable to be thus treated are those in which the disease has had its origin in chronic synovitis, and gone on to ulceration of the cartilages, with perhaps superficial caries of the bones; whereas the cases which are ill adapted are those in which the bone is very extensively diseased, and at a distance to which the acid cannot reach.

The treatment has not been uniformly successful, though such has been the result in the majority of cases. Mr. Holmes says: "The treatment of carious joints, by the application of strong sulphuric acid, may, however, save many joints which would otherwise have been excised, and thus preserve the length and future growth of the limb, and at less risk to life."—*Medical Times and Gazette*, December 11, 1875.

Chloral as an Application to Foul Ulcers.—At Guy's Hospital, in the service of Mr. R. Clement Lucas, a trial of the application of an aqueous solution of hydrate of chloral, of the strength of four grains to the ounce, has given great satisfaction. The dose is so small that there is no danger of producing constitutional symptoms. A considerable degree of smarting, for about a quarter of an hour, usually follows the first use of the lotion, and that subsequently diminishes.

Cases are appended showing how large ulcers, with foul bases, quickly cleaned off; the granulations assumed a florid, healthy appearance; and cicatrization progressed with unusual rapidity.—*London Lancet*, *December*, 1875.

Successful Case of Transfusion.—At a meeting of the Royal Academy of Medicine of Belgium (reported in the *Gazette Hebdom.*, February 11, 1876), a paper was presented, reporting successful transfusion of a patient comatose from carbonic-oxide poisoning. The man, aged twenty-five, was in a se-

vere state of collapse, the result of sleeping near a charcoal-brazier; heart-sounds, imperceptible; pulse, 130; temperature, 37.6°. Two hours later, respiration became slower, and tetanic convulsions set in. Microscopical examination of the blood showed that the red globules had lost their tendency to form rouleaux. Sixty-seven grammes of blood (no mention of the kind of blood used or the method) were transfused; the patient's heart became more active, a chill followed, and the convulsions ceased. In six hours the improvement was well established, and in eight days the patient left the hospital.
E. H. B.

On Forced Taxis in Strangulated Hernia. By Dr. Max Schede (*Centralblatt für Chirurgie*, 1874, 24 and 25).—Although the great majority of modern works on the treatment of strangulated hernia have declared against long-continued energetic taxis, and against its performance after a long period of incarceration, the experience of the author, as clinical assistant at Halle, as also his private practice, has proved to him that, in appropriate cases, an energetic taxis should be practised in spite of the general opposition. Without agreeing with Prof. Thiry, of Brussels, that the surgeon can always succeed with taxis, he advises energetic and long-continued taxis in all cases where there are no symptoms of intense inflammation or commencing gangrene, that is, œdema of the cutaneous envelopes below the hernia. A feeling of fluctuation, indicative of a large amount of effusion, is, likewise, a contraindication. In such cases, he advises the usual operation. From April 1, 1868, to August 1, 1874, the author has observed fifty-one cases of strangulated hernia (exclusive of umbilical hernia), twenty-eight being of the inguinal variety (twenty males and eight females), and twenty-three being of the crural (two males and twenty-one females). Of these fifty-one cases (one died from *réduction en masse*), forty-one were reduced, and ten operated on; five died, which gives six deaths in fifty-one cases. Of forty successfully-reduced cases, in fourteen, the strangulation had lasted less than twelve hours; in eleven, from twelve to twenty-four hours; in seven, two days; in seven others, three days; and in one, six days—this was an inguinal hernia of the left side, which had been strangulated forty hours before the patient was admitted to the clinic. Herniotomy was performed in ten cases, of which six were inguinal herniæ (five men and one woman; four men died) and four crural (four women, with one death). In two cases the incarceration had lasted two days (one recovery and one death); in two cases, three days (all died); in one case, four days (recovered); in two cases, five days (all recovered); and lastly, in three cases, the time was undetermined (one recovery and two deaths). Three of the fatal cases were operated on *in extremis.* On the other hand, the author believes that two of the cases operated on would probably have yielded to energetic taxis. Nevertheless, the mortality number, eleven (eight per cent) is very low, for the results obtained in the large hospitals from 1866 to 1872 are one hundred and eighty-nine deaths in seven hundred and eighty-six cases, or a mortality of twenty-four per cent. The author, however, observes that at Halle the conditions are more favorable than elsewhere, as the patients affected lose no time in presenting themselves at the clinic as soon as strangulation shows itself. Still, of sixteen patients, which did not come under the care of the author until the hernia had been strangulated more than one day, one only had not had attempts at taxis performed by other physicians.

M. Schede attributes his successes to the fact that he has no fear, after having assured himself of the condition of the gut, of employing more force than is generally resorted to. When the integuments still retain their normal condition, when the tumor is not tender, and when no crepitation can be felt, we can always conclude, according to the author, that the walls of the gut still have sufficient resistance to permit energetic taxis without danger. It is impossible to lay down general rules as to the period when attempts at reposition are still admissible; neither the number of days since the incarceration nor the presence or absence of stercoraceous vomiting can furnish these. In each case a thorough local examination, combined with a consideration of the general condition of the patient, is called for. In order that taxis may succeed—firstly, profound narcosis is necessary; secondly, the position of the outlet must be determined exactly. The author generally employs both thumbs, with which he exerts alternate strong pressure in the direction of the outlet on a portion of the tumor which is near it; when the hernia is very small he exerts his pressure directly on the summit of the hernia. In the cases successfully reduced by taxis, the author has seldom exerted pressure less than five minutes, and never more than a quarter of an hour, but during this time he has employed a degree of force which would generally be regarded as inadmissible. In the commencement of his practice, he caused *réduction en masse* by pressure continued upward of an hour, and the patient died. He believes, however, that the danger of causing *réduction en masse*, and of failing to recognize it when it has been produced, is not great; for, though the persistence of symptoms of incarceration may sometimes be confounded with the effects of the anæsthetic, the tendency of the hernia to reproduce itself will always be an indication that the reduction has not been performed in a proper manner.—*Revue Med. Chir. Ther.*, 10, 1875. E. F.

THEORY AND PRACTICE.

The Means of Resuscitation after Poisoning. [British and Foreign Medico-Chirurgical Review, July, 1875.]

Dr. Benjamin W. Richardson, in a report on Toxicology, reviews the case of recovery after poisoning by aconite, reported in the New York Medical Journal, April, 1875, and says in comment on it:

The case is, indeed, full of interest, as illustrating once again what can be effected by continuous artificial respiration. In the patient whose history has been given, the action of the heart was reduced to that lower tension of action which we have described in the Croonian lecture, "On Muscular Irritability after Systematic Death," as the tension of syncope. The heart-stroke in such cases is sufficient to keep up a feeble pulmonic circuit and a sufficient systematic circuit to prevent pectous changes; but the nervous centres are not effectively supplied, and the respiration, therefore, fails to be excited. In such examples, a little assistance to respiration is a means of maintaining the circulation of low tension for a very prolonged period, and, when the depression of the heart is from an agent that is susceptible of elimination from the body under the continuance of vital motion, the artificial respiration becomes the means of restoring life that is even startling in the grandeur of its results.

In recording Dr. Blake's report, with sincere admiration of his and his colleague's courage, endurance, and skill, we would venture to make an observation or two derived from experimental and clinical experience bearing upon the details of the treatment. We think that in another similar case, after the stomach has been emptied, it would be advisable not to administer alcohol. Alcohol diluted assists to distribute the alkaloidal poisons the more actively through the tissues and to hasten the symptoms of poisoning in all their intensity. Then, in respect to artificial respiration, we would submit that, in the cases under consideration, it is better to maintain it by the double-acting bellows, that is to say, by force supplied by another person than by the force of the patient, excited into motion by the electric stimulus. We have tested the two methods by careful experiment on the deeply narcotized animal, and, by means of the metronome regulation of the faradic current, have made the respiration excited by the current as regular as the ordinary natural respiration of the animal. By this means it is true that the artificial respiration can be long sustained, but it is at the expense of the force of the animal, and is, therefore, exhausting to an extreme degree. When the artificial respiration is sustained by the operator, it is equally effective as an artificial aid, and it relieves the patient of all exhaustion. Between the two processes, there is, in short, just the difference that occurs between stimulating a worn-out animal to walk to a destination, and carrying it to the same destination. Thus, in our experiments, we found we could even destroy muscular action by the current, through the exhaustion it produced, and, when we succeeded in restoring by it, it was always with the result of an after-debility and drowsiness which are unknown when the simple hand-method is employed. Once in Dr. Blake's case, at the period when he and his learned colleague had to resort to Marshal Hall's plan, this exhaustion of muscle under the galvanic stimulus did occur, and the rest from that stimulus, with mechanical maintenance of respiration, was the saving modification of treatment.

The employment of oxygen as an adjunct to artificial respiration, on which Dr. Blake naturally dwells with so much emphasis, introduces to our notice a practical matter which we have tried many times to study by experiment. We have no doubt that the use of oxygen in the diluted form, as suggested by Dr. Thomas, was of service. At the same time, if oxygen be not at hand, no operator need be under any anxiety from its absence. We have found that to raise the temperature of the common air supplied by artificial respiration to 75° Fahr. is as effective, in quickening the oxidation of the blood, as is increase of oxygen. Indeed, on the whole, the warm-air method is safest, because an excess of oxygen, the precise degree of which excess is not yet defined, is actually injurious.

We incline altogether to the view expressed by Dr. Blake that the secondary symptoms of collapse and coma were due to a uræmic condition. For this very reason we would urge the more strongly the importance of simple mechanical artificial respiration by the double-acting bellows—through which no waste of tissue or formation of secondary product of tissue is involved—to the muscular respiration excited by galvanic stimulus.

We fail to see the value of the hypodermic injection of the cognac, but we do not, in the absence of inquiry into it, by direct appeal to experiment, dispute its value. On the whole, we have rarely met, in twenty years of reporting on toxicological subjects, with a record more valuable to medical science than this which Dr. Blake has supplied. As a result it is one of the practical fruits of experimental research which every true investigator must recognize, especially at this moment, with extremest satisfaction.

THERAPEUTICS.

Bromhydrate of Quinine.—This preparation (*Gaz. Hebd.*, February 18, 1876, and also *Gaz. Hebd.*, September 17, 1875) has been recommended by M. Gubler as having especial properties, independent of those of bromine or of quinine, apparently the result of the combination. The drug has the same effect as sulphate of quinine, but it acts less on the auditory apparatus. M. Soulez (*Journal de Therapeutique*, December 10, 1875) finds that the bromhydrate is effective where the sulphate has failed; also, that its action is more rapid; if given one hour before the time of chill, the access of the chill will be checked. It is much more soluble than the other salts of quinine, and can be used, therefore, more readily, subcutaneously. E. H. B.

OBSTETRICS.

Diseases of the Heart in Women.—M. Duroziez (*Gaz. Hebd.*, January 21, 1876), after observing a number of cases of lesions of the heart in women, concludes as follows: Disease of the heart delays the appearance of the menses; these are often irregular. Abortion is common. The danger of the death of the mother during labor is not very great, but the percentage of the death of the fœtus is very high. In many of the patients observed, the menses continued during pregnancy. Although there are many chances that a woman, suffering from a lesion of the heart, may bear healthy children without aggravation of her disease, it is the opinion of the writer that marriage, if not absolutely contraindicated, is not advisable. E. H. B.

Miscellany.

Appointments, Honors, etc.—Prof. Fordyce Barker has been appointed one of the visiting surgeons to the Woman's Hospital of this city. Dr. William T. Bull has been appointed House-Physician to the New York Dispensary. Sir James Paget has been elected President of the Royal Medical and Chirurgical Society for the ensuing year.

Mr. John Birkett, Vice-President of the Royal College of Surgeons of England has been appointed Government Inspector of Provincial Medical Schools. The report of the Royal Commission on Vivisection has been completed and laid before Parliament. Dr. Joseph Fayrer, the medical adviser of the Prince of Wales in his travels in India, has been made "Knight-Commander of the most exalted Order of the Star of India." Prof. Huxley has been awarded the Wollaston Medal of the Geological Society. The Emperor of Austria has made Mr. Max Gregor, of London, a Knight of the Imperial Order of Franz Josef, in recognition of his improvements in the culture and export of Hungarian wines. A full-length marble statue of Prof. Stokes has been placed in the hall of the King's and Queen's College of Physicians in Ireland.

The Academy of Medicine in Rome has decided, on the proposal of Prof. Maggiorani, to place in the university a marble bust of the celebrated anatomist Andreas Cæsalpinus. The *Raccoglitore Medico* claims for him the merit of having been the discoverer of the circulation of the blood. An Asylum for Lepers, with a capacity for one hundred and fifty patients, is to be built at Bombay as a memorial of the visit of the Prince of Wales. Prof. Shroeder, of Erlangen, has accepted the chair of Obstetric Medicine in the University of Berlin, made vacant by the death of Prof. Martin.

College of Physicians and Surgeons.—The sixty-ninth annual commencement exercises were held March 1st. The graduating class numbered ninety-three. Rev. Dr. Bellows delivered the address to the graduates, and Dr. Frederick A. Lyons read a valedictory poem.

The following prizes were awarded: First prize for thesis, $50, to Abraham Mayer, New York; second thesis, prize of $25, to David H. Davison, New York; Stevens triennial prize for the best thesis on the use of the application of the spectroscope in its relations to practical and scientific medicine ($200), to Dr. E. Rosenberg, New York; prize of $50 for best examination in anatomy, to Frederick P. Griswold, Connecticut; prize of $100 for best examination in diseases of children, to J. Augustus Walther, New York. For best clinical reports, Howard E. Wilson, of Massachusetts, received a case of surgical instruments; Charles F. Stillman, of New Jersey, $50, and Edward B. Foote, Jr., of New York, a microscope; and George S. Knickerbocker, H. Ashland Clay, S. O. Vanderpoel, Jr., Alonzo Blauvelt, of New York, and Algernon T. Bristow, of Brooklyn, received honorable mention.

The Alumni Association prize of $400 was awarded to Dr. Thomas E. Satterthwaite, for an essay on the structure and development of connective tissues.

The Decimal System in Pharmacy.—The Austrian Government has ordered the adoption of the decimal system by the druggists of Austria, the regulation having gone into effect at the beginning of the present year. The former weights are no longer to be used in dispensing; and, when prescriptions are written according to the old system, the druggist must translate the weights into those of the metrical system. For his guidance in doing this, a table of the equivalent weights of the two systems is published. When special accuracy is required, prescriptions must be written according to the metrical system; and practitioners are recommended in general to abandon the use of apothecaries' weight. The unit of weight is to be the *gramme*, the numbers being expressed in Arabic figures. The integral grammes are to be divided from fractional parts by a decimal point or stroke; and in all cases the fractional parts must be expressed by two places of decimals: thus, five centigrammes = 0.05; two and a half grammes = 2.50. As the words "decagramme" (ten grammes) and "decigramme" (one-tenth of a gramme) are liable to be confounded, it is recommended that neither be used, but that, in place of writing, for instance, "five decagrammes," the expression "fifty grammes" be used; and that "fifty centigrammes" be written instead of "five decigrammes."

American Medical Association.—The twenty-seventh annual session will be held in the city of Philadelphia, on Tuesday, June 6, 1876, at 11 A. M.

Secretaries of medical societies are earnestly requested to forward, *at once*, lists of their delegates, in order that the Committee of Arrangements may be enabled to form some idea of the number likely to be present.

The following committees are expected to report: On Mechanism of Accommodation of the Eye, Dr. D. S. Reynolds, Ky., chairman; on New Remedies, Dr. Austin Flint, Jr., N. Y., chairman; on the Medical and Surgical Uses of the Aspirator, Dr. E. S. Gaillard, Ky., chairman; on Influence of Climate on Pulmonary Diseases in Minnesota, Dr. Franklin Staples, Minn., chairman; on the same in Colorado, Dr. Chas. Denison, Col., chairman; on the same in Florida, Dr. E. T. Sabal, Fla., chairman; on Proper Legislation to prevent the Spread of Syphilis, Dr. Samuel D. Gross, Pa., chairman; on Prize Essays, Dr. Samuel D. Gross, Pa., chairman; on Necrology, Dr. S. C. Chew, Md., chairman; on Rank of

Medical Corps of the Army, Dr. H. A. Johnson, Ill., chairman.

Bellevue Hospital Medical College.—The fifteenth annual commencement of this College was held February 15th. After the usual ceremonies the degree of doctor of medicine was conferred on a class of one hundred and fifty-nine gentlemen. The address to the graduating class was delivered by Prof. A. B. Crosby, and the valedictory address by Charles W. Cropper, of Illinois.

The following prizes were awarded: to John A. Wyeth, M. D., of New York, the Wood prize of the Alumni Association, $100, for the best essay; to P. J. Higgins, the first Mott prize, $50, for the best clinical report; to Seth W. Williams, the prize for the best examination in physiology, established by Leonard J. Gordon. Honorable mention was made of the examinations for this prize passed by J. A. Coogan, W. A. George, J. H. Jackson, G. H. Magness, H. Muhlfeld, F. A. Rice, F. R. Sherman, and E. H. Tyler.

Medical Department of the University of New York.—The thirty-fifth annual commencement was held February 15th. The degree of doctor of medicine was conferred on one hundred and thirty-three gentlemen. The Rev. Dr. Storrs delivered the address to the graduating class, and George W. Chandler the valedictory address.

The following prizes were awarded: to Harry Bell Conrad, of New York, the Mott gold medal; to Alexander Dallas, of New York, the Mott silver medal; to Elbert C. Drake, of New York, the Mott bronze medal; to C. A. H. L. Von Randohn, of New York, Prof. Budd's prize, also Prof. Thomson's prize; to William Howland Taylor, of Massachusetts, Prof. Loomis's prize; to Edward Sanders, of New York, Prof. Arnold's prize, also Prof. Roosa's prize, to Samuel Kohn, of New York, Prof. Weisse's prize; and to H. S. Norris, of New York, the prize established by Mr. James Bryce.

A New Medical Association.—Representatives of the medical profession from the counties of Huntingdon, Blair, Mifflin, and

Perry, met at Huntingdon, Pa., on the 4th of February, for the purpose of organizing what is to be known as the "Juniata Valley Medical Association." The following officers were elected: President, Dr. Roan Clark. Vice-Presidents, Dr. John B. Ross, of Blair; Dr. D. P. Miller, of Huntingdon; Dr. J. I. Marks, of Mifflin; Dr. D. M. Crawford, of Juniata; Dr. O. H. Orris, of Perry. Recording Secretary, Dr. A. B. Brumbaugh. Corresponding Secretary, Dr. A. Rothrock. Treasurer, Dr. W. M. Finley.

Free Hospital for Children.—The last annual report of this institution shows a total number of ninety-six patients treated. The medical staff is as follows: Consulting Physicians, Austin Flint, Sr., M. D., and Alonzo Clark, M. D.; Consulting Surgeons, George A. Peters, M. D., and Erskine Mason, M. D.; Attending Physicians and Surgeons, Robert Watts, M. D., and Charles T. Poore, M. D. The Society have purchased the building they now occupy (Thirty-fourth Street and Eighth Avenue) for $30,000.

State Medical Societies.—The annual meeting of the Texas State Medical Society will be held in Marshall, April 4th; that of Tennessee in Nashville, April 5th; that of Mississippi in Jackson, on the same day; that of South Carolina will meet in Columbia, April 11th; that of Alabama in Mobile, on the same day; the Medical and Chirurgical Society of Maryland will assemble in Baltimore, April 12th; the Society of the the State of North Carolina in Fayetteville, May 3d; and the twenty-seventh annual session of the Medical Society of the State of Pennsylvania will be held in Philadelphia May 31st.

Weston's Nitrogen.—The walking-feats of Mr. Weston are attracting much attention in England, and his extraordinary power of enduring fatigue is commented upon by the medical press. Dr. Pavy is conducting a series of observations somewhat similar to those made by Dr. Austin Flint, Jr., when Weston was walking in this city, with a view of determining the effect of muscular effort on excretion.

Accidental Deaths in England.—The official returns of violent deaths in England during the year 1873 have just been announced in detail. It appears that 1,290 persons were killed by railway accidents, and nearly as many (1,250) by horse conveyances of various kinds.

The New Medical Weekly Journal.—We understand that Dr. Milner Fothergill has resigned the position of editor of the *London Medical Examiner*, and that Dr. Oakley Coles has become both editor and proprietor of that journal.

The Paris Night Service.—At the beginning of the present year a medical night service was organized in Paris by the *préfect.* Thus far four hundred and eighty physicians have enrolled their names for that service.

Aconite-Poisoning.—A case of death is reported in the *Lancet* from the accidental administration of aconite-liniment. According to the estimate, the patient swallowed one-tenth of a grain of aconitine.

The United States Medical Directory.—The publishers of this work announce their intention of issuing a second edition, and request timely notice of all changes in address.

The Mortality of Montreal.—Our readers do not need to be told that Montreal is an unhealthy city; that everybody, the world over, unfortunately knows too well, but perhaps they may or do not know the depth of our degradation, do not know how very far down we are in the mud. We are indeed *almost* in despair, nay not *almost, we are indeed in despair*, that anything ever will be done to lift us up in the scale to anything even approaching respectability; we hesitate to say what position we occupy, comparing our mortality with other cities, for it is disgraceful, with all the healthfulness of our position, that we should be so very near the bottom of the list. Few cities of the Old World, with their crowding and their filth, show such a ratio as we do, and we believe that on this American Continent we have the disgraceful honor of having the largest death-rate. The total mortality for the year 1875 was 6,311. Seven hundred and eighty-four were from small-pox, and, as regards nationality, 653 were French-Canadians, 103 British-Canadians, 2 *Irish*, 4 *English, and* 4 *Scotch, and* 18 *were divided among other nationalities.* Is it not shameful that so many of our French-Canadian fellow-citizens should be slaughtered by the neglect of vaccination, for there is not the shadow of a doubt but that it is to this neglect that so large a mortality is due? Its opponents hold doggedly to their anti-vaccination views, and the injury they have done and are doing is incalculable. Perhaps in the future there may be a change, but we despair.—*Canada Medical Record*, February, 1876.

Savage Attack by a Lunatic.—We take the following from the *British Medical Journal* of January 29th:

We deeply regret to learn that as Dr. Brushfield, one of the superintendents of the Brookwood Asylum, was medically attending to a male patient in one of the wards of the asylum on Saturday morning, the latter suddenly seized an earthen vessel, and with it dealt the doctor a running fire of terrific blows on the head. Dr. Brushfield fell to the ground, but the lunatic, with savage fury, continued his attack. Fortunately, two of the attendants, alarmed by the noise, entered the ward. They immediately sprang on the madman, and at once disarmed and secured him. Dr. Brushfield has received several scalp-wounds, and lies in a condition of great suffering and danger.

Obituary.

PROF. PITHA, of Vienna, died December 28, 1875, aged sixty-five years. Prof. Billroth, in his memorial address, says of him, "He was one of the most distinguished teachers and one of the most remarkable surgeons of Europe."

DR. THOMAS M. LOGAN, Secretary of the State Board of Health of California, died February 13th, at Sacramento, Cal. Dr. Logan was elected President of the American Medical Association in 1872, and presided at St. Louis, Mo., in May, 1873.

DR. JOHN H. EDWARDS, of St. Joseph, Mo., died January 1st, in the seventy-third year of his age. The Medical Society of Central Missouri assembled and passed resolutions expressive of regret and esteem.

GEORGE GREEN GASCOYEN, F. R. C. S., one of the Surgeons of St. Mary's and Lock Hospitals, London, died in that city of pleuro-pneumonia, January 23d, in the forty-sixth year of his age.

M. Andral, for many years one of the most distinguished pathologists and clinical teachers of France, died recently, in his seventy-ninth year. He had long lived a retired life in a country village.

It is with sincere regret that we announce the death of Sir George Duncan Gibb, Bart. The deceased gentleman was M. A. and M. D. of McGill College, Montreal, and M. R. C. P., London, and for some years held the office of Physician to the Westminster Hospital. He contributed copiously to the medical literature of the day. By his death the profession has lost a very worthy and esteemed member.—*Lancet.*

Dr. E. Lee Jones, formerly in active practice in this city, died January 30th, in Oakland, Cal., where he had taken up his residence in consequence of failing health. At the time of his death he was President of the Alameda County Medical Association.

Dr. Caffe.—Our Paris correspondent writes under date January 24, 1876: It is with deep and sincere regret I have to announce the death of Dr. Caffe, a well-known physician, which took place on Wednesday last, at his residence in Paris, from chronic bronchitis. In by-gone years, Dr. Caffe was one of the leading oculists of Paris, but latterly he was better known by his connection with the *Journal des Connaissances Médicales*, one of the oldest medical journals in Paris. Dr. Caffe was born in 1803, took his degree in 1833, and was member of several foreign learned bodies. He was also officer of the Legion of Honor, and officer of the Minister of Public Instruction.—*British Medical Journal.*

Charles F. Rodenstein, M. D., of Tremont, Westchester County, N. Y., died of pneumonia, March 18th, aged forty-eight years. Dr. Rodenstein was an active member of several medical societies, and took a deep interest in his profession. He was also a scholar of no mean attainments, and a man of broad general culture. His loss at so early an age will be deeply regretted by all who knew him.

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Original Communications.

Art. I.—*On the Wire Ligature in the Treatment of Ununited Fractures, and in Resections of Bones for Deformity.*[1]

By William A. Byrd, M. D., Quincy, Ill.

Prof. Hamilton, in his work on "Fractures and Dislocations," fourth edition, page 71, uses the following language: "Tying the fragments together by means of metallic ligatures, after a recent fracture, is as old as the days of Hippocrates; but in 1805 Horeau adopted the same procedure in a case of ununited fracture, since which date it has been practised successfully by many surgeons. My own experience confirms the value of the method, especially when the fragments overlap."

It shall be my object in the present article to collect such cases as I can find in current literature within my reach, and deduce from them the conditions demanding the operation, and other practical points of interest to the surgeon.

Prof. H. J. Bigelow, of Harvard, kindly sent me a pamphlet containing the history of eleven cases of ununited fracture occurring in his practice, that were treated with the metallic ligature, from which I make the following abstract:

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[1] A modified portion of the President's Annual Address, read before the Adams County Medical Society, May 10, 1875.

Case I. *Humerus.*—E. J., twenty-two years old, had ununited fracture, caused by having his right arm drawn between the rollers of a splitting-machine, eleven months before his admission to the hospital, October 15, 1857. He was treated by seton, rubbing the bones together, resection, and a splint so applied that the ends of the bone were crowded together, after being irritated by pliers made to pierce the ends of the fractured fragments, without securing union.

February 14, 1860.—Dr. Bigelow operated by making a crucial incision over the fracture, dividing the bands of ligamentous tissue between the fragments, and turning out the ends of the bone. The periosteum, with the muscles attached, was detached an inch or more from each end of the bone. The ends were then sawed off. A hole was drilled through each end of the bone, a silver wire passed through and twisted until the ends were brought in apposition. The external wound was united with sutures, with the ends of the wire protruding.

June 13*th.*—The wire was untwisted and taken out, union being firm.

July 12*th.*—Discharged. The arm appeared to be nearly as useful as the other one. Wire remained four months.

Case II. *Ulna and radius.*[1]—A. D., aged fifty-six years, entered hospital February 6, 1861. Four years before both bones of right forearm were fractured by machinery. Nine months after the injury, there being no union, the ends of the ulna were sawed off and wired together, and various other means resorted to without success.

9*th.*—Dr. Bigelow operated by making an incision over the seat of fracture, along the upper border of the radius; the ends of the bone were turned out, the periosteum was dissected up, and half an inch of each fragment sawed off. A hole was then drilled through each end of the medullary cavity, and a stout silver wire passed through and twisted. The arm was placed on an external angular splint and bandaged firmly to prevent motion.

February 13, 1863.—Patient returned to have wire removed, which was done the next day, two years from the time of insertion. He had good use of his arm.

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[1] In Dr. Bigelow's report this case is headed "Radius," but the history of the case shows it to be an ununited fracture of both radius and ulna.

Case III. *Humerus.*—J. C., aged twenty-four years, entered hospital November 4, 1861. Eight months before, he received an oblique fracture of the left humerus, extending from about four inches above the lower end on the outer side to a point two inches above the inner condyle. Fracture ununited.

9th.—Dr. Bigelow operated by cutting down on the fracture, turning out the ends of the fragments, carefully detaching the periosteum, and sawing off an inch and a half from the lower fragment and an inch from the upper. Holes were drilled through each end, a silver wire passed, and twisted until the fragments were in apposition. The musculo-spiral nerve was divided with the exception of a single fasciculus.

March 11th.—A small piece of necrosed bone came away.

May 22d.—Discharged, well. Sensation and motion in the hand perfect. Wire remained six months.

Case IV. *Humerus.*—C. D., aged thirty-one years, entered hospital December 4, 1862. Received a comminuted fracture of nearly the whole length of the left humerus a year before, by arm being caught by a revolving shaft. Various means were resorted to to procure union, without effect.

December 6th.—Dr. Bigelow operated by cutting down upon the false joint, exsecting the pearly, gristly ligament that united the two ends, and dissecting the periosteum up from each end for about a inch. The ends were then sawed off, holes drilled through them, a wire passed and twisted until the fragments were in apposition. The free ends of the wire were left projecting from the wound. An abscess formed near the elbow that required opening, as also did some sinuses.

March 9th.—Discharged, well. Wire remained two months.

Case V. *Femur.*—B. H., aged twenty-seven, entered hospital March 10, 1863. Received a fracture of middle of left thigh, by being run over by a heavy wagon, five hours before. November 12th, there being no union, Dr. Bigelow operated by cutting down upon the fracture, dissecting up the periosteum for an inch from either extremity, and cutting off the ends with a chain-saw. A hole was drilled through each end of the bone, and a silver wire passed and twisted until the ends were nearly together. A small space was left to prevent breaking the wire or the bone. The limb was placed on McIntyre's double-inclined iron splint. July 12th, furnished with a thick-soled shoe, and discharged well. Wire remained five and a half months.

Case VI. *Humerus.*—T. C., aged forty-one. Right humerus splintered at the junction of the middle and upper third, at the first assault on Port Hudson, in 1863. Entered hospital April 15, 1864. Dr. Bigelow operated April 16th, by cutting down on the fracture, dissecting up the periosteum, sawing off the ends of the fragments, drilling holes in the ends of the bone, passing a wire and twisting it until the ends were in apposition. June 24th, the arm being considerably firmer, he was discharged. September 17th, union being perfect, the wire was removed, having remained five months.

Case VII. *Humerus.*—E. S., female, aged forty-five, entered hospital November 10, 1864. Had received a compound fracture of right humerus a year and a half before. On entrance, the fragments were drawn widely apart by the weight of the arm. November 19th, Dr. Bigelow operated by cutting down upon the ends of the fragments and turning them out. The periosteum was dissected back about an inch and a half on the upper fragment, and two inches on the lower, and the denuded bone sawed off, the upper with a single stroke of the saw. The bony tissue was so soft as to be easily cut with a knife, and the holes for the passage of the wire were made with an awl. The wire was passed and twisted until the fragments were brought nearly into apposition. The wire was not twisted tightly, for fear of breaking through the bone. March 10th, no union. April 1st, an incision was made down to the bone, the ends of the fragments turned out, and found so degenerated as to be easily broken down with the fingers. The arm was amputated.

Case VIII. *Humerus.*—W. W., aged twenty-eight, entered hospital January 2, 1865. Had his left humerus fractured a little below the middle twelve weeks before. February 25th, there being no union, Dr. Bigelow cut down upon the fracture, dissected up the periosteum, and sawed half an inch from the upper, and three-fourths of an inch from the end of the lower fragment, drilled holes through the ends and passed a silver-plated copper wire, which was twisted until the ends of the bone were brought into apposition. The musculo-spiral nerve, which had been drawn out of its natural position, was accidentally divided during the operation. A suture was passed through each end of the neurilemma of the divided nerve, and the ends brought together. June 24th, the wire was withdrawn. The humerus was perfectly stiff. Sensibility had returned to the thumb and index-finger, but motion in all the extensors of the hand and wrist was absent. March 17th, motion returned to the extensors perfectly. Union of humerus perfect and free from pain. Wire remained four months.

Case IX. *Humerus.*—T. G., aged twenty-six, entered hospital June 12, 1865. Had received a compound fracture of the middle of right humerus a year before. The bone was still ununited. June 21st, Dr. Bigelow operated by cutting down upon the fracture, from the outer aspect of the arm, carefully seeking and turning aside the musculo-spiral nerve, dissecting up the periosteum, sawing off half an inch from the lower and three-quarters of an inch from the upper fragment, drilling holes in each fragment, passing a silver wire and twisting the same until the fragments were in apposition. November 4th, the bone being perfectly stiff, a pair of curved scissors were thrust down, and the wire cut close to the bone and easily removed. December 15th, discharged well. Wire remained four and a half months.

Case X. *Humerus.*—W. M. W., aged thirty-three, entered hospital January 26, 1866. Received a compound comminuted fracture of right humerus at its middle, from a gun-shot-wound received at the battle of Gettysburg. July 5, 1863, three inches of bone were resected; no union was sought or obtained. January 27th, Dr. Bigelow, being disabled, requested Dr. Hodges to operate, which he did by cutting down on the fracture, dissecting up the periosteum, and sawing off half an inch from the end of the lower and three-quarters of an inch from the end of the upper fragment, which was degenerated and soft. The ends were drilled and nearly approximated by a silver wire. May 23d, the wire was cut and removed. The union was firm, the wire having remained four months.

Case XI. *Humerus.*—P. M., aged twenty-three, entered hospital January 12, 1867. Received a gunshot-wound at the battle of Cedar Mountain, in 1862, which shattered the middle of the left humerus. The small pieces of bone were removed, the ends sawed off, and the fragments approximated. Six months later there was no union. The ends were again sawed off, and the bones wired together. In two weeks the wire was removed. In October, 1864, a number of small pieces of necrosed bone were removed from the seat of fracture; there was no union. In November, 1865, he entered the hospital. Still no union. There was necrosed bone at the bottom of a couple of sinuses in the lower fragment. An incision was made over the fracture, the periosteum reflected, and the ends of the bone sawed off. In March, 1866, there was no union. March 31st, Dr. Bigelow again operated. The periosteum was detached from both fragments for a sufficient distance, and about an inch and a half sawed off the lower and an inch off the upper fragment. The ends were drilled, silver wire inserted, and the fragments brought in apposition. April 28th, the arm had stiffened at the point of fracture. June 10th, he fell upon the arm and rebroke it. July 15th, he was discharged with an ununited fracture, to return when the arm looked and felt better. January 12, 1867, Dr. Bigelow operated by cutting down on the fracture. Great difficulty was experienced in everting the ends of the now short fragments, and in detaching the periosteum. The bone was finally separated from the periosteum for a sufficient distance, and a piece, one inch long, was sawed from the upper and three-quarters of an inch from the lower fragment. The lower fragment was two inches in diameter; the upper one was of normal size, but with fatty degeneration of the marrow. A hole was drilled through the sides of both fragments, a silver wire inserted, the ends placed in apposition, and the wire twisted. The periosteum was replaced, and its edges united by sutures. The external wound was partly closed by sutures. A folded towel was placed in the axilla, to lift out the short upper fragment, and the arm secured to the side, with the forearm across the chest. January 13th, there was almost complete paralysis of the extensors of the fingers of the left hand. No nervous trunk was known to have been divided in the operation, and the paralysis was perhaps due to a compressing of the nerve in very forcibly everting the shortened fragments; 21st, the arm was placed in an apparatus which consisted of a firm cap about the shoulder, secured by a strap around the chest. This was made firm by two steel bridges to a splint that invested the arm like a coat-sleeve. April 16th, the fracture was firm. Could flex the forearm and raise the humerus from the side freely; 22d, discharged, probably well.

The humerus shortened seven inches by the five opetions it was subjected to—two before entering the hospital and three by Dr. Bigelow afterward; yet the muscles were fulfilling their functions and the patient was getting good use of his arm. The wire remained four months.

The above abstract contains about all of the material facts as reported in each of Dr. Bigelow's cases.

Prof. S. D. Gross, in his "System of Surgery," second edition, vol. i., page 955, refers to ligaturing ununited fractures under the categorical heading of excision. He gives Horeau the credit for originating it, and states that it is pretty generally condemned by European surgeons, but is often employed on this side of the Atlantic, apparently from the high authority of Dr. J. Kearney Rodgers, who was the first to perform the operation in this country.

He then describes the operation and recommends the tying of the fragments *firmly* together with a silver wire. Then follows an account of two cases that he operated upon, both of the humerus. In one a single wire ligature was passed, and after union it was taken away. The second had two ligatures passed, which were permanently retained. Prof. Gross uses a common gimlet to make the holes in the bone with. He says of the operation: "It is generally imagined that this procedure is necessarily followed by violent inflammation, jeopardizing both limb and life; but this is an error. If the operation be carefully performed, and the after-treatment conducted upon proper principles, I believe that it will commonly be found to be entirely free from danger, while the utmost confidence may be placed in its efficacy."

The next case I find is one reported by Mr. Thomas Annandale (*British Medical Journal*, January 9, 1875, and *Monthly Abstract*, March, 1875, page 127).

R. K., aged twenty-nine years, was admitted to the Edinburgh Royal Infirmary, June 24, 1873, for ununited fracture of both bones of the forearm. He had received a compound comminuted fracture of both bones of the arm about six months before. The flesh-wounds had healed, but the bones had not. Mr. Annandale operated June 27th, by cutting down upon the fracture of the ulna and sawing off one-fourth of an inch from each of the atrophied and rounded ends. There was fully an inch of space between the fragments of the ulna, and the ends had become pressed in until they had united by fibrous bands with the radius. These adhesions were broken up, and, to render the ulna and radius of the same length, fully an inch of the partially-united radius was exsected. Holes were drilled through the extremities of both bones, and silver wires, of the size usually employed to fasten the corks of soda-bottles, passed through them and twisted until the ends of the fragments were in apposition.

August 3d.—The wire through the radius was removed, and on the 13th that through the ulna likewise.

29th.—The patient left the hospital nearly well. Six weeks afterward he returned, with the bones firmly united, with partial pronation and supination. The motion of his arm was steadily increasing. The wire remained one and a half month.

Mr. Annandale recommends a sprig-awl for making the holes for the passage of the wire in these operations. He also recommends this mode of treatment for cases of recent compound fractures of the bones of the forearm, where there is great difficulty in preventing them being pressed toward each other and adhesions forming between them.

Dr. John H. Packard, of Philadelphia, reports in the *American Journal of Medical Sciences*, July, 1875, page 125, *et seq.*, a case of ununited fracture of the radius and ulna of left arm. The time elapsing between the receipt of the injury and the operation was a hundred and ten days.

Dr. Packard operated, after first applying Esmarch's bandage, by cutting down upon the point of fracture first of the ulna and then of the radius, and sawing off the ends of the fragments with a Butcher's and a chain saw. He gives the chain-saw the preference, because in using it less forcible distortion of the parts is necessary. Holes were drilled half-way through the ends of each fragment—to the medullary canal—and a pure silver wire passed, and the fragments brought into apposition by three twists of the wire from left to right. The ends of the wires were left over an inch in length and bent over, with a piece of lint between the ends and the skin. A very ingenious tin splint was made to reach from the middle of the upper arm to the ends of the fingers, and was applied with silicate of soda brushed over the layers of the bandage so as to form an immovable apparatus. Holes were cut through the dressing over the points of incision. There was considerable difficulty experienced in drilling the holes, on account of the extreme hardness of the bone.

Dr. Packard's mode of detaching the wire is both unique and useful. He passes the ends of the wire through a wire-twister, such as is used in operating on cases of vesico-vaginal fistula, and pushes the instrument well down on the twisted portion of the wire, keeping the free ends of the wire tense in the mean time; then, by giving the instrument as many reverse turns as were given the wire upon applying it, it is untwisted and easily removed. The wire in the radius was removed one hundred and eight days after the operation, and that in the ulna one hundred and twenty-four days after, at which time the bones were firmly united, with good use of the limb.

The January (1876) number of the *Monthly Abstract* contains an abstract of a paper Prof. Dolbeau contributed to the *Bulletin Général de Thérapeutique*, July 15, 1875, in which he recommends the metallic ligature in cases of ununited fracture of the humerus. He makes a distinction between ununited fractures and cases of delayed union, believing that those cases which get well without exsection and the wire ligature are merely cases of *delayed* union. To sixteen cases operated upon by exsection and suture, of which eight were failures, he adds a successful case of his own. He recommends that the ends of the bone be sawed very slanting, so as to counteract shortening as much as possible. The most of his other recommendations that are of any value are contained in the abstracts of Drs. Bigelow and Packard's cases.

The January (1876) number of the NEW YORK MEDICAL JOURNAL contains the report of a case of ununited fracture of the radius and ulna of three years' standing, which, having resisted various other means, was operated on by Dr. Thomas M. Markoe, November 11, 1875, by cutting off the ends of the fragments and drilling holes in them, passing a silver wire and bringing the fragments in apposition. The February number of the same journal contains a favorable account of the progress of the case.

The above are all the cases I have been able to find purely of exsection of bone and wiring the ends for ununited fracture, but to them I wish to add a case of section of a united fracture and the wiring of the ends that was reported by Prof. Paul F. Eve, to the *Nashville Medical Journal*, and copied into the *Richmond and Louisville Medical Journal* for May, 1873.

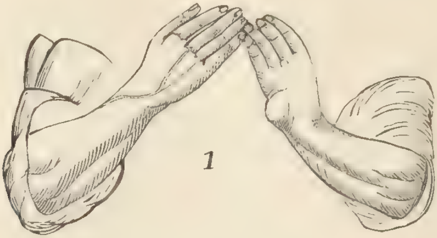
Mr. A. M. Smith received a fracture of the right collar-bone from being thrown from a mule. The fragments had united with a lapping of one inch, and with more than the usual amount of deformity. The head of the humerus so pressed upon the nerves and blood-vessels of the axilla as to seriously interfere with the use of the right arm. Prof. Eve cut down upon the point of fracture by making a semilunar incision three inches in length, the convexity down, the middle of the incision reaching below the clavicle at the point of fracture. The flap was dissected up, exposing the overlapping fragments fully, and the subclavian artery and internal jugular vein. The viciously-united fragments were divided with a pair of cutting pliers, and the roughened ends squared off. The periosteum was cut through and a hole drilled in each fragment half an inch from the end, a silver wire passed through, and the ends of the fragments brought into apposition by pressing the shoulder backward, outward, and upward. The wire was then tightly tied and the ends thrust into the holes. The wound was closed with sutures and adhesive plaster, and dressed with carbolic lotion. A soft pad was placed in the axilla, and the hand carried across the chest and placed in a sling. The patient suffered from ague and erysipelas after the operation, but got well, with a fine result. To use Prof. Eve's words: "And why not; for who does not know the innocuity of silver wire to the flesh, and how easily it may become incased in callus? I, therefore, recommend the metallic suture for all fractures of the clavicle, recent or otherwise, believing that the slight exposure made by the operation as described would not much increase the danger in such cases, wherein the methods now resorted to fail to keep the ends of the broken bone in apposition."

To these cases I will add one of my own, in which I resected a portion of the continuity of a sound ulna, and wired the ends, to correct a deformity resulting from an ununited Colles's fracture of the radius. The case is reported at length in the October (1874) number of the *Richmond and Louisville Medical Journal*, and a fair abstract is contained in the *Monthly Abstract* for April, 1875.

William M. Francis received a Colles's fracture of the left radius in 1868, when fifteen years old. A physician of considerable reputation for surgery in the local columns of the daily press was called in and dressed the injury. Some time after he first saw the case the fracture became compound by the end of the upper fragment making a hole in the integument at the front of the arm. The wound was several months getting well, when he was discharged by his physician. When I first saw him, six years after the receipt of the injury, he was unable to straighten the left arm to a greater extent than is represented in Fig. 1.

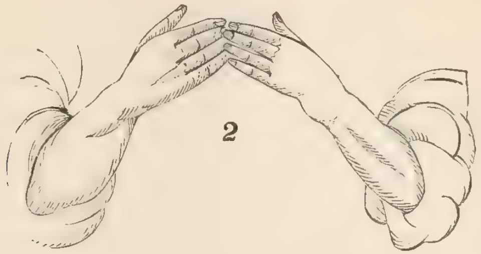
There was an ununited Colles's fracture of the radius, with considerable cupping of the palm of the hand, and an inability to either fully extend or flex the fingers. November 1, 1873, I cut down upon the ulna, opposite the fracture of the radius, and carefully detached the periosteum with its adherent muscles over about an inch of the continuity of the bone, which was then resected with a chain and metacarpal saw.

Something over an inch of the lower end of the ulna was left. An incision was made over the ununited fracture at the radial side of the arm, and the ends of the atrophied fragments cut off with pliers. A hole was drilled to the medullary cavity of each of the fragments of the ulna, and an iron wire passed and twisted tightly, bringing the fragments closely into apposition. The ends of the radial fragments were not wired. Several different kinds of splints were tried and laid aside for one of plaster of Paris, moulded to the back and lower half of the forearm from the elbow to the ends of the fingers.



February 7th.—The radius had united. The wound on the ulnar side of the arm was nearly closed, but there was a sinus on the front aspect of the arm, midway between the radius and ulna, that led down to the wire, and two small pieces of necrosed bone included in its twist, which being loose were removed. The wire was bright and unchanged. The ulna rapidly healed, and April 8, 1874, when he started for California, the cupping of the hand had been in a great measure overcome. He writes from San Francisco, December, 1875, that his hand and arm are as good and useful as the left hand and arm of most people.

Fig. 2 shows the improvement after the operation. There was a deformity to overcome, and I could find no precedent for the operation I performed. I searched in vain for "authorities" that would reconcile me to the views I had upon the subject. The nearest I could find were two cases of compound fracture of the radius, reported by Prof. Hamiltion in his treatise upon "Fractures and Dislocations," fourth edition, pages 295, 296, where he successfully cut off the *lower end* of the ulna to make it the same length as the shortened radius, and to relax the muscles. This operation I considered faulty.



Although the lower end of the ulna does not enter into direct articulation with the wrist-joint, yet I could not but believe that the destruction of the attachments of the ligaments connecting the ulna with the carpus, and the exposure of the triangular fibro-cartilage, would be liable to greatly endanger the integrity and usefulness of the joint. Acting upon that idea, I performed the operation above briefly described; and now if I meet with any cases of fracture of either of the bones of the forearm, having anything like a sufficient loss of bone to cause non-union, or serious deformity, I shall exsect its fellow *in its continuity* and *not the end*, and wire the ends of the fragments together. I shall, in the event of being called to treat a fractured tibia, with the loss of bone-substance causing a gap, cut down upon the continuity of the fibula and resect sufficient of its shaft to allow the ends of the fragments of the tibia to come together. Such practice I believe will soon be considered the most legitimate for a surgeon to pursue.

That it is not so recognized at present, is evident from Prof. Frank H. Hamilton's most admirable work, "The Principles and Practice of Surgery," second edition, page 254. He says: "Resection is not applicable where, from the resistance offered by parallel bones, the ends cannot subsequently be brought into contact; if, therefore, resection is practised upon the tibia, the fibula being sound, or upon either one of the bones of the forearm, care must be taken that no more than the overlapping extremities of the fragments are removed. If there is no overlapping, this operation is inadmissible." At another place, in the same work, he advises non-interference, and states that non-union is likely to result, and that the best result we can obtain will be more or less of a deformity. But these are his words, page 388, *et seq.:* "Excision of a portion of the shaft of one or the other of these bones, for necrosis or other disease, is often required; but in the case of one bone of the forearm, from any cause whatever, it must be borne in mind that excision of even a small portion of the entire diameter of the bone is pretty certain to result in non-union. It will be far better, therefore, to allow the fragments to remain, and to thus offer a chance for a *deformed* union, than to take the risk of no union at all. I have observed, also, that when a portion of the ulna is lost, and no bony union takes place, the head of the radius is very liable eventually to become displaced; or, if it is a portion of the radius which is lost, the lower end of the ulna sooner or later is thrust inward and downward. When both bones are broken, and the forearm is allowed to shorten upon itself, the danger of non-union is much less, and fragments may be removed more freely.

"Excision of the lower end of the radius alone, when not accompanied with a fracture and shortening of the ulna, invariably results in more or less deflection of the hand to the radial side. I have seen it turned in this direction to nearly a right angle. If, therefore, excision of the lower end of the radius is practised, and the ulna is not broken and overlapped, it will be advisable to remove at the same time an equal portion of the lower end of the ulna. In the single case in which I have adopted this practice, the subsequent inflammation and suppuration were moderate, the hand was restored, occupying its normal position, with good motion at the wrist-joint, and a useful amount of motion in the fingers. The great value of thorough excision of both bones in this class of cases, as a means of insuring complete relaxation of the muscles and of preventing subsequent inflammation, will be found fully explained and illustrated by cases in my 'Treatise on Fractures and Dislocations of the Long Bones.'"

To my mind, the time is past when surgeons can, with safety, allow deformities that may be remedied to ensue from lesions they are called upon to treat. It is far better that a surgeon, when called to treat conditions as spoken of above, should make a free resection from the continuity of a sound bone, if necessary to secure parallelism, knowing that the quality of contracture of the muscles will secure a useful limb without deformity, other than shortening, than have his patient get well with a deformity to embitter his life, and perhaps go to some competitor and have it corrected, much to the surgeon's discomfiture.

In making resections of the ends of bones for ununited fractures, Dr. Bigelow accredits Jordan, of Manchester, with priority in detaching the periosteum. But Jordan, and likewise Sedillot, failed, because they first detached the muscles, and then pounded the periosteum to loosen it from the bone; thereby devitalizing and ruining it for the reproduction of bone. Jordan also neglected to wire the ends of the fragments in his cases.

As to the kind of wire to be used, surgeons differ. Some use silver, or silver-plated copper, but I have a preference for iron wire, imbibed perhaps from the teachings of the late Prof. Joseph N. McDowell, of the Missouri Medical College. I first heard him mention it in connection with fractures of the patella, in a lecture to his class during the 1866–'67 session. He spoke about thus: "Gentlemen, between twenty-five and thirty years ago, while passing along the streets of Philadelphia, the late Dr. George McClellan, an illustrious surgeon of that city, called me to his buggy and requested me to accompany him, to assist in an experiment he said he was going to perform upon a fractured patella. When we arrived at the bedside of his patient, he cut down upon the fracture with a longitudinal incision, and bored holes slantingly from about half an inch in each fragment from the edge of the fracture to the centre of the fractured surfaces, and passed through these holes a soft-iron wire, and tied the fragments nicely in apposition. Dr. McClellan's experiment was a success. The patient got well with the only bony union I believe I ever saw of a fractured patella. Dr. McClellan used the best metallic substance for a ligature that, in my opinion, has yet been found. But, gentlemen, my advice to you is, don't try the same experiment."

With, of course, but limited experience with the various metallic ligatures, I agree with Drs. McClellan and McDowell. I even prefer iron wire in operating for vesico-vaginal fistula.

Prof. Dolbeau recommends a plurality of ligatures, and that they be passed through the whole thickness of the bone; both of which propositions I believe to be faulty. If the wire is sufficiently strong, one ligature will hold the bones in apposition, unless they are softened, if passed sufficiently far back from the point of section to the medullary cavity. Then, if in twisting they are drawn so tightly as to cause bruising, and necrosis of the bone included in the twist, there will be sufficient surface unaffected in that manner for union, which would not be the case if the whole thickness of the shaft were included in the twist of the wire, or more than one ligature were used. He also cuts the ends of the bones very slanting, which requires very great care in stripping up the periosteum and in making the sections. If the ends are not cut exactly right, when union takes place the patient will have a deformed limb, which is not at all probable if the ends of the fragments are cut square off, as then any malposition of the limb may be corrected by giving it a slight twist during the after-treatment.

Of course, no surgeon will rely solely on the wire ligature to hold the limb in proper position during the time required for treatment. The best splint for the femur, under such circumstances, would be the same the surgeon would use for compound fracture of the same bone, and for that purpose Dr. John T. Hodgen's wire suspension splint fills the indications better than any other I have tried; for the other portions of the limbs, plaster-of-Paris splints, made by cutting out a pattern of paper that will encircle half the limb, and from that pattern cut the splint out of cotton-flannel, doubled so that the rough sides are together. These pieces of cloth are to be dipped into a mixture of plaster of Paris and water, somewhat thicker than cream, and then bound with a roller over the half of the limb where they are expected to act as a splint. It is well to cover the limb with newspaper before applying the splint, to prevent the plaster sticking to the hairs. When the plaster is set, the splint may be taken off and dried well over a stove and the rough edges trimmed off. It is well to have two plaster splints, so that, if one gets covered with the secretions from the wound, it may be taken off and cleaned and disinfected while the other one is being worn.

The next thing to consider is the instrument with which to make the holes in the bone. Dr. Gross uses a gimlet, which makes too large a hole, is difficult to work, and is liable to split an eburnated bone. Dr. Bigelow uses a bone-drill, which generally makes too large a hole. Mr. Annandale uses a joiner's small pricker, an instrument that has completely failed in my hands when experimenting on bones to decide upon the best instrument. Dr. Fifield, in the *Boston Medical and Surgical Journal* for May 20, 1875, page 608, says that Mr. Lund, of Manchester, uses a jeweler's brooch for a bone-drill, which, gradually enlarging from its point, does not clear itself, and consequently does not work well in hard bone. I have tried all of the above instruments, and like none so much as what machinists call a common twist-drill. With one of these instruments in a breast drill-stock, a surgeon can bore rapidly through the hardest bone, or even iron, with the greatest accuracy.

The drills may be had of almost any hardware-merchant, from one-sixteenth to three-fourths of an inch in diameter. It is best to go to an operation with one or two extra drills, for fear one, if it is very small, or the surgeon awkward, may be broken. If the surgeon does not wish to use this form of drill in a breast-stock, he can work it fairly well by fastening it in a universal tool awl-handle.

I have gone thus carefully into the details of the instruments with which to make the holes, because I believe that some that have been recommended would fail the surgeon in the time of his need, and nothing could be more unfortunate than to cut down on an ununited fracture, promising the patient and your assistants that the ends of the fragments are to be wired together, and then be unable to bore a hole in the bone through which to pass the wire.

The wire in one of Prof. Gross's cases, and in Prof. Eve's case, was left in the bone indefinitely; but with the introduction of Dr. Packard's wire-*untwister* such a course is entirely unnecessary.

ART. II.—*Perineal Lacerations.*[1] By MONTROSE A. PALLEN, M. D., Professor of Gynæcology, Medical Department of the University of New York, Surgeon to Charity Hospital, etc.

THE mechanism of laceration of the perinæum is as yet a mooted point, and under certain conditions nothing can be done by the obstetrician to prevent the accident. This point was illustrated in the case of a woman, aged thirty-nine years, primipara, whom I delivered (at the clinic in Charity Hospital) with forceps. She had been in labor about thirty hours, and had had no pains for some five hours before I saw her. The position of the head was right occipito-anterior, the os uteri fully dilated, the liquor amnii had been drained early in labor, and the vertex had not engaged. The child was dead, as no fœtal heart-sounds could be detected, and the caput succedaneum crepitated under pressure. The vagina of course had been dilated, and the perinæum was short, thick, and rigid. The ilia were oblique and vertical, masculine in appearance, and the arch of the pubes was angular and projecting. The promontory of the sacrum was projecting, but the concavity was shallow. For these reasons I anticipated perineal laceration, and mentioned to the class that the accident was to be expected, notwithstanding every precaution would be used to avoid it. The perinæum was torn to the sphincter ani, although the head was kept close to the pubic arch by carrying the forceps well over the abdominal walls, coadded to pressure with the fingers through the rectum upon the fœtal malar projections. The rent in the perinæum was closed with three silver sutures, the woman being under chloroform, although this was retarded some time by a profuse *post-partum* hæmorrhage in consequence of the persistence of uterine inertia. The hæmorrhage was checked by passing the hand into the uterus and emptying it of the clots, as well as the use of a continuous stream of ice-water from a Davidson syringe, while the hand remained *in utero;* in fact, the hand was not removed, but ultimately expelled by the uterine contractions.

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[1] Read before the New York Medical Journal Association, March 24, 1876.

The patient made a good recovery, the perinæum, however, not being as well formed as before the labor.

This case is but the type of a numerous class, and from its management is illustrative of what I propose to elucidate as to the mechanism, prevention (?), and treatment, of perineal laceration.

Mechanism.—We cannot explain the mechanism of perineal laceration without studying the construction of the perinæum as well as the mechanism of the emergence of the head, the adaptation of the vaginal, perineal, and vulvar capsules during the process of the occipital extension, as well as the facial sweep, when the gateway of the pubic arch is passed.

The *perineal body* is a pyramidal substance inserted between the rectum, where it inclines backward, and the vagina where it commences to abruptly curve forward. It is the conjunction of muscular and aponeurotic tissues mutually supporting and sustaining each other, but the *perinæum proper* is composed of this structure as well as all the tissues lying between the tip of the coccyx and the fourchette. Their interdependence during parturition not only demonstrates their mutual physiological correlation, but an anatomical survey likewise reveals the fact that the perineal body is but one of a tripartite structure. If a vertical central section of the frozen female pelvis be made extending through the median line from the symphysis pubis to the sacrum, we bisect the bladder, uterus, vagina, and rectum. The base line of this bisection corresponds to the *raphé* of the perinæum, and about one inch and three-quarters above we find the vagina and rectum in apposition; but from this point downward the recto-vaginal septum increases as we descend, for an inch or more in a right line, fully two on a curve, the posterior curvature being the longer in consequence of the double curve of the rectum. This interposed pyramidal structure is the perineal body, the *point d'appui* of vaginal support.

In other words, to be as plain as possible, the height of the perineal body is one or one and a quarter inch from its apex to its base in a right line, but the sides of the pyramid are longer and concave, as they follow the convexities of the posterior wall of the vagina and the anterior surface of the rectum. The base of this pyramidal structure may be more or less than an inch in length, in proportion to the dip or curvature of the vagina or rectum. The perinæum in totality, then, is the amalgamation of three structures, the *perineal body* (composed of the conjunction of the transverse perinei, the sphincter-ani, the ischio-cavernous, and the levatores-ani muscles, together with the deep and superficial perineal aponeuroses), the *vagino-perinæum* (made up of the inferior posterior vaginal wall, fourchette, superficial aponeuroses and integument), and the *recto-perinæum* (formed by the attachment of the sphincter-ani muscle to the coccyx).

These structures may be torn during labor, either separately or conjointly, and the character of the laceration depends upon the direction and intensity of the force, as well as the resistance-power of one or all of the component parts of the perinæum.

The mechanism of the emergence of the head from the outlet is that of *encapsulation* and *procession*,[1] which is a flattening and adaptation of the labia, the posterior wall of the vagina, the fourchette, and the inferior curvature of the rectum to the fœtal head. As a consequence, the levatores-ani muscles are stretched laterally, circumferentially, and longitudinally, the constrictor vaginæ rolled out, the ischio-cavernous flattened under the descending rami of the pubes, and the sphincter-ani squeezed and compressed from behind forward. These various actions of the muscles necessarily strain the central conjunction where the perinæum is located.

From these facts we readily understand how the rupture may commence in the mucous membrane of the vagina or the fourchette, or it may be produced by a direct sundering of the fibro-cellular attachments of the muscles above described without any tearing of the mucous membrane. The mucous membrane of the vagina or the fourchette is torn when the face rolls forward in extension at the time of the occipital sweep. The fibro-cellular attachments are severed when the expulsive force acts somewhat in a direct line, in the first stage of the occipital rolling under the pubic arch, most usually after the descent of the head when laceration of the cervix takes place, or when the pelvis is very capacious, the head small, and the expulsive uterine force rapid and energetic. It is in cases of this kind that the laceration is made complete by the further distention of the vagina and fourchette when the shoulders emerge or are drawn out by the accoucheur.

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[1] *Procession* of the vulva is a term I have long used, in contradistinction to *retrocession* of the coccyx.

All efforts to save the perinæum under certain accidental and predisposing conditions will result in disappointment to the obstetrician. In fact, if "liberating incisions" are not made on either side, through the labia, *above* the openings of the duct of Bartholini,[1] no probable anticipation of escape is to be entertained. These incisions should be made on both sides (during the cessation of a pain) with scissors, midway between the fossa navicularis and the fourchette, whereby we save the perineal structures and obtain wounds not exposed to the lochial discharge, which are sure to heal by the granulation process even if we fail to obtain adhesive union by the application of silver sutures. Sometimes these incisions are further torn when the head emerges, but such lacerations are infinitely preferable to those of the perinæum.

What are the conditions, accidental or predisposing, which render the efforts of the obstetrician frequently inefficient to prevent a laceration of the perinæum?

The accidental causes are—1. Laceration of the cervix, whereby the fœtal head suddenly enters the excavation, and drives through the perinæum before it has been sufficiently distended, either by the amniotic bag, or by the rise and fall of the head itself during the uterine contractions, or pending their intermissions.

2. Unskillful instrumentation. If the accoucheur follows the advice of Blundell, and bears in mind the axioms of "*arte non vi*" and "*cave perineo*," the use of the forceps will save the perinæum, when none of the predisposing causes exist; but, should they be found present, fortunate is the woman if she es-

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[1] The ducts of the vulvo-vaginal or Bartholini's glands should never be wounded, because closure might ensue in the process of cicatrization; and, as a consequence, cystic disease and abscess are produced. These vulvar abscesses are very common in women who have had vaginitis, either specific or otherwise, because of the closure of the vulvo-vaginal ducts.

cape! I do not wish to be understood to say that a laceration will necessarily ensue, but it is to be apprehended, and may be prevented only by extraordinary skill upon the part of the accoucheur, and extreme quiet upon the part of the patient, not readily obtained save under the influence of ether or chloroform.

3. An unusually large fœtal head, and, in primiparæ, not unfrequently complicated with a small vagina and vulva.

4. Excessive deposit of adipose tissue, or spastic muscular contraction, or both combined.

5. Ulceration of the fourchette (most frequently syphilitic), or disease of the recto-vaginal septum, from hæmorrhoidal, syphilitic, or cancerous trouble.

The predisposing causes are vulvar, vaginal, and pelvic:

1. Vulvar predispositions frequently depend upon age. A woman may be too young (*non nubile*), or she may be too old. In youth the tissues are not sufficiently developed, and the perineal structures are too thin and feeble, while in more advanced life they are atrophic, and defective as regards elasticity and distensibility.

2. The vagina may be too short and narrow and the perineal base unduly lengthened, in which condition the capsule of procession is formed at the expense of the perinæum, which fits closely upon the head, and is not strong enough to resist the uterine forces and deflect the vertex to a curve parallel with the extended vaginal outlet. It therefore gives way, and laceration ensues. In cases of this character, when the fœtal head or shoulders are above the average size, and the labor active, even if the forceps are used, the accoucheur may consider himself fortunate if his patient escape with a simple laceration of the pre-anal perinæum. The mechanism of such lacerations depends upon the too rapid extension of the fœtal head in occipito-anterior positions, or too little or insufficient rotation where the occiput is posterior. Face-presentations are even more liable to produce lacerations than are those of the vertex.

3. Pelvic predispositions are, prominence of the sacro-vertebral angle, elongation of the pubic symphysis, and consequent narrowing of the arch—too great or defective sacral

curvature, or, what is more frequent, a maximum of space in the excavation, which gives more than sufficient room to the fœtal head, and therefore offers not enough resistance to the engagement, and permits its impinging too soon upon the perinæum. In the last subdivision, laceration ensues from too rapid and energetic uterine contractions ; in the three others, the accident is more likely to depend upon stoppage of the head upon the perinæum, the uterine forces not acting sufficiently strong to overcome the irregularities of transit (caused by the osseous departures from the normal pelvic planes), but sufficient to drive the head through the perinæum if any of the vulvar predispositions exist, conditions most usually occurring.

If the head be suddenly extruded from the vulva, accompanied by sharp pains, we may suspect laceration. Under these circumstances, in fact after every delivery, it is the duty of the obstetrician to make a careful examination of the outlet, to determine or not the presence of perineal rupture. In a large number of instances considerable tearings of the fourchette and vagina pass unnoticed, and even a destruction of the entire substance to the anus may be overlooked, in the confusion incidental to the last parturient efforts. These wounds occasionally heal spontaneously, but so rare is this result that we are never warranted in anticipating it. There is one case on record where the sphincter ani and the posterior wall of the vagina were involved in the laceration, which healed without operative interference, but this fact is to be classed among the curiosities of obstetrical literature. Notwithstanding this single isolated case, which happened in the practice of the late Prof. George T. Elliot, it is a good rule to formulate, that laceration involving the sphincter ani is absolutely without prospect of spontaneous cure, and that sooner or later the patient will have to submit to some operative procedure for the reconstruction of the perinæum and a restoration of the integrity of the bowel and vagina.

The recognition of the accident determines the question of treatment, whether it shall be *immediate*, while the edges of the wounds are yet raw and bloody ; or *secondary*, when the granulation process is going on, as advised by Velpeau, Nélaton, and Maisonneuve ; or *subsequent*, after a certain period has elapsed, when the margins have become cicatrized and contracted. This question of treatment is even now *sub judice*, at least with regard to the immediate application of sutures. The experience of the majority of obstetricians, however, is decidedly in favor of the immediate application of sutures, as soon as the placenta is delivered, and the bedding cleansed of the discharges attending the delivery. Certain cases must be operated upon at once, when the hæmorrhage is at all profuse or threatening, several examples of which I have seen within the past few years. Under all circumstances, I am in the habit of at once closing the rent, of whatever character, unless the exhaustion of the patient precludes interference.

Any number of authorities of eminence might be quoted to sustain these views, from Danyau who insisted upon immediate union by sutures, to Winkel, who reports one hundred and one cases of perineal laceration successfully treated in this manner.

The reasons for immediate action were well put by Danyau, and, as none better can be given, I will quote them in full. He says: "If we act immediately after delivery, we do not perform a bloody operation, we simply apply a dressing. The parts, naturally swollen, are in the best possible condition for exact juxtaposition ; the lochia will flow, it is true, but they do not touch the wounded surfaces, provided the sutures are accurately applied. Moreover, do we not see wounds in the vagina, gangrene, or incomplete ruptures heal, notwithstanding the lochial discharge? Finally, the woman utilizes her time of quiescence necessitated by the labor, as the immobility favors union."

The examination of quite a number of cases of laceration of the perinæum, where there was (so-called) spontaneous union, has convinced me that in no one instance was there complete and perfect restoration of the integrity of the parts. Either the integument alone was united, leaving the vaginal mucous membrane and the submucous tissues disrupted, or there was a shortening and retraction of the posterior inferior vaginal surface. In all the cases the fourchette was destroyed, and in some there were sieve-like openings between the bridles of united skin-tissue. In many operations, made a long time subsequent to delivery, we may look for similar results unless certain procedures are carried out, presently to be described.

Many years ago Maisonneuve popularized the use of *serres-fines* (at La Pitié Hospital in Paris) as substitutes for sutures in certain kinds of wounds, and Braun, of Vienna, has since applied them in lacerations of the perinæum, and his teachings have been followed by many distinguished obstetricians. When we carefully analyze the construction of the perinæum, we are disposed to look upon the use of any sustentative means, other than sutures, as insufficient and ineffectual. The totality of the perineal body is the union of certain muscular and aponeurotic tissues above described, and, unless they are brought in direct apposition, retraction will ensue, and the best we can hope for when *serres-fines* are used is a union of the vaginal mucous membrane and integument, leaving the intermediate structures separated or filled in with granulation cicatricial tissue; and, as a consequence, we have a sacculated or pouched inferior posterior vaginal wall, a condition I have described as "perineal sundering," to be referred to further on, when the various kinds of lacerations of the perinæum are mentioned. The scope of a *serre-fine* is too limited to bring in apposition anything more than the perineal integument, and possibly the vaginal mucous membrane. Therefore, it is best to pass sutures well through the entire series of structures, embracing every layer of tissue, and to do this well they must be passed fully an inch from the central line or *raphé*, through the connective tissue anterior to the rectum, behind the vagina and brought out equidistant on the opposite side. When the sphincter is involved, it must be closed by a separate and distinct set, to be tightened before the perineal sutures are drawn up and twisted. These sutures, of course, are of silver, and rather larger than the ordinary wire, because they are less liable to cut through.

When the woman is under the influence of an anæsthetic, this procedure can be done very rapidly and expeditiously, and, even when she is not unconscious, the parts are so obtunded that the operation is not excessively painful, and I have seen quite a number of patients who submitted to it without serious inconvenience or objection. The results under these circumstances are so good in the vast majority of cases that it ought to be regarded as the procedure *par excellence.* In fact, Schröder, Abegg, of Dantzic, as well as Bidder and Sutgin, of St. Petersburg, are unqualifiedly in favor of deep and superficial sutures combined, and attribute the majority of failures (and they were very few, hardly twenty-five per cent.) to the inefficient manner in which they were applied by inexperienced and unskillful medical students. My own experience is somewhat large, embracing about thirty cases, and, I can recall but three where perfect union did not take place by the time the woman rose from her lying-in couch. Much depends upon the accuracy of adaptation, as well as the number of sutures, and much more depends upon the subsequent treatment. It is true the cases I saw were not affected with puerperal fever, nor did they manifest certain ulcerative and diphtheritic processes sometimes encountered; but they were all treated with extreme care, such as evacuating the bladder by the catheter, and protecting the wound from urine, lochial discharges, etc., by constant vaginal douches of cold or tepid water, according to circumstances, as well as the thorough use of antiseptics, principally a solution of permanganate of potash after every vaginal douche. The legs were always kept bandaged, and, when the woman desired to lie on her back, the buttocks were likewise kept in contact by letting them rest on a circular rubber air-cushion which prevented any separation whatever. The bowels were not confined, as is usually recommended, with opium, but on the contrary the patient's rectum was washed out with tepid water to soften the fæces whenever the inclination to stool became urgent. This freedom of the bowels is very beneficial in several ways: it saves much inconvenience from flatus, and prevents colic; it does not in the least interfere with union of the wound, provided the sutures have been properly adapted, and a sufficient number passed; and, finally, there is no accumulation of fæces in the rectum, which becomes very hard, rolling into large masses after a certain number of days, the extrusion of which produces great pain, and in one instance, under the hands of a most distinguished operator, tore open the united surfaces twice in the same patient. Should the bowels be kept constipated they should always be evacuated before the removal of the sutures; but in my judgment, based upon a large number of operations for lacerated perinæum, immediate and subsequent, it is safer and better to keep the stools free and liquid.

If, after immediate operation, union does not take place, or if the patient is left to the reparative process of Nature, and the laceration persists, we find several conditions requiring surgical skill for a restoration of the integrity of the parts. A choice of procedure is not a matter of indifference, as the character of the rent may have induced certain changes in the vagina, bladder, or rectum, very frequently in all of them. No operation for laceration of the perinæum should be undertaken without prior examination of the position of the uterus or the integrity of the cervix. When fissure of the cervix exists, and such is a very common condition, it should be treated by freshening its edges, and apposition by silver sutures.

Sometimes rectocele and cystocele are found to be so great as to require special operations, either before or at the time of the perineorraphy; but usually these conditions are but secondary to the perineal rent, and disappear after it is closed.

Retroversion, in my experience, always attends perineal laceration, and, notwithstanding its denial by many authorities, this uterine malposition is sure to come on, sooner or later. I have known a woman to go many years without retroversion with laceration, but, as she grew stouter, and there was an increase of superincumbent intestinal weight, the sustentative power of the vagina gave way, and the uterine dislocation took place. In this case, examination of the uterus in the earlier stages would fail to find any abnormity of position, but later it existed. Therefore, we can understand such discrepancy of statement, as the patients were not followed up. A reposition of the uterus is sometimes all that is necessary, after the integrity of the perinæum is restored, but most frequently a properly-adjusted pessary is requisite to maintain the organ in its normal axis, a state which could not be obtained before a successful operation, as the sinking of the posterior vaginal wall precluded the adaptation and wearing of self-sustaining intra-vaginal pessaries. With regard to those forms of pessaries known as "supporters," which depend upon body-straps or pads, I am convinced that they are of little use, and are frequently productive of harm, as no contrivance of this kind can be made to keep the uterus in position without subjecting it to the jar communicated to it by the whole body when in motion. This is a very serious discomfort to the laboring-woman, and sometimes dangerous, by arousing metritis. Another objection to these instruments is their proneness to produce hyperæmia of the cervix and vagina, and consequently leucorrhœa, and, in some instances, ulcerations and sloughs, from continued pressure. They also entail upon the wearer much trouble, on account of the filth and disagreeable odor attending their use—to be avoided only by frequent daily vaginal injections, as well as cleansing of the instrument.

An operation for laceration of the perinæum ought to be performed in every case where we can hope for union of the wounded surfaces. The restoration of a conjoined and symmetrical action of the muscles, aponeuroses, vaginal tissue and integument, which make up the perineal structure, is the object sought to be obtained; and, while we can hardly hope for complete action in an artificial perinæum, yet, under certain circumstances, we can obtain a much stronger one than existed previous to the laceration, one which gives sufficient vaginal support, and insures freedom from the discomforts and ills attending the loss of the base of support to the entire utero-vaginal structure.

There are four conditions of perineal rupture requiring operation. 1. When the submucous structures are *sundered*, a most frequent accident; 2. When the *pre-anal* tissues are torn; 3. When the *sphincter ani* is involved; 4. When the fœtus is expelled through the bowel and lacerates the sphincter to its coccygeal attachments, leaving the pre-anal perinæum intact, examples of such being recorded by Sédillot, Coutonly, Roux, Moreau, and others. These forms, then, are classified as *perineal sundering*, *vagino-perineal*, *perineo-rectal*, and *recto-coccygeal* lacerations.

Perineal Sundering.—This depends upon defective muscular action, in consequence of lesion of the anterior and posterior superficial branches of the pudic nerve, involving atrophy and degeneration of muscular tissue; or, as a result of direct violence which severs the union of the transverse perinei muscles from their attachments to the bulbo-cavernous in front, the sphincter-ani behind, and the levatores-ani above and around, at the time of the emergence of the child. The mucous membrane and integument resist the pressure of the head, because none of the predisposing causes to laceration exist; yet, nevertheless, the shoulders sometimes complete the rupture. When this sundering takes place, the mucous membrane of the vagina and the skin of the base (perineal *raphé*) remain, the posterior portion of the vagino-vulvar outlet becomes a thin patulous bag, without any sustentative power, and is always accompanied with a greater or less amount of cystocele and rectocele, and, as a consequence, very productive of retroversion of the uterus.

Many cases of intractable leucorrhœa depend upon the pouching and sinking of the vagina toward the coccyx produced by this accident, because the sphincter ani is detached in front from the transverse perinei, and the only method of treating these patients consists in rolling the pouch forward from the rectum, in order to cleanse the sac and apply medicaments. When the woman takes a vaginal douche lying on her back or squatting over a basin, the vaginal transverse folds close the pouch, and no fluid enters.

The distance from the fourchette to the anterior margin of the anus, in these cases, rarely exceeds the fourth of an inch. In some of these cases a vivification of the posterior vagino-vulvar perineal space, and approximation as in other operations for perineal rupture (except that the integument is not divided but folded upon itself), not only cured the leucorrhœa, but relieved the patients of the distressing dragging pain and inconveniences of cysto-rectocele. The perineal structure is thereby reformed, as indicated by the increased length of the base, the distance from the anus to the fourchette being restored to its normal length, about one inch and three-quarters, and the recto-vaginal septum filled with a new perineal body, recognized by exploration to be pyramidal or irregularly triangular as in the natural state. The same care is requisite after an operation of this nature, as in other lacerations.

Perineal sundering is the lesion encountered, where retroversion of the uterus is sought to be rectified by those enormous pessaries sold in the shops, which crowd the rectum backward to the hollow of the sacrum or jam the bladder under the pubes, invariably giving rise to a deal of trouble if not harm, and because no smaller instrument will sustain the uterus in position. When we carefully analyze the state of the parts, we can readily understand why a proper-sized, small pessary cannot hold up the uterus. The pouching of the vagina would not take place if its proper sustentative base were intact; therefore we find that the concavity of the posterior vaginal fornix of the Douglas space is obliterated, because of the detachment of the transverse perinei muscles from the sphincter ani, wherefore the sinking of the rectum toward the coccyx, and the dragging thereafter of the flabby vagina deprived of perineal basic support. Under these circumstances there is nothing left upon which a pessary can rest, a difficulty not to be overcome by crowding one of those colossal instruments, those anatomical monstrosities almost as great in circumference as the pelvic evacuation, into a vagina never intended to be so much distended, save when the fœtal head traverses it. No pessary should ever be used that is longer than the distance from the sub-pubic ligament to the posterior fornix of the vagina. In the average-sized woman this rarely exceeds two and a quarter inches. When an instrument is accommodated to this area it will not impinge upon the bladder or rectum, and it will follow the vaginal transpositions coincident with the rise and fall of the abdominal contents during respiration. A pessary of larger size keeps up hyperæmia of the vaginal mucous membrane, induces leucorrhœa, vesical tenesmus, dysuria, or may even prevent a discharge from the bladder or rectum. A pessary is nothing more nor less than a splint, and, like all other splints, should not interfere with the nutrition of the parts or impede their functions.

Vagino-perineal or pre-anal, as well as *perineo-rectal* lacerations, are so fully and thoroughly described by most gynæcological writers—under different names, however—that it would be but a repetition of their views were I to enter into any details on the subject. The literature of perineal lacerations is very abundant, and in reality there has been very little improvement in the principle of perineorraphy since it was first made by Roux in 1832, although the introduction of silver sutures has very materially simplified the *modus operandi.* For these reasons I shall omit any consideration of the surgery of *subsequent* operation. With regard to *immediate* or *post-partum* operation, I am unqualifiedly in favor of it, if the woman be not too much exhausted.

As to the producing causes of perineal laceration, I am disposed to believe that when they exist, as above described, no skill upon the part of the accoucheur can avoid the accident, unless he relieves the perineal tension by vulvar liberating incisions. Furthermore, these facts should be kept prominent, because their recognition will do much toward protecting the physician's reputation, as well as saving the woman much unnecessary and consecutive trouble.

ART. III.—*Two New Instruments for the Detection and Prevention of Pulmonary Disease.*[1] By EDGAR HOLDEN, A. M., M. D., Ph. D., Newark, N. J.

GENTLEMEN: It is with considerable diffidence that I call to your attention new mechanical devices for the diagnosis and prevention of pulmonary disease, but feel assured that any contribution to our means of diagnosis, or any measure which can favorably affect those pulmonary disorders which have proved so intractable to modern science and skill, will be courteously received by the profession.

The instruments before you are, I believe, entirely new, and presented now for the first time. The first, in the fullest sense of the word, is a pneumatometer, yet it is in reality a *pneumasirene*, a sirene moved by the breath; but it is more than this, and purports to be a measure of the force, capacity, and rhythm, of the respiratory currents.

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[1] Read before the New Jersey Academy of Medicine, March 15, 1876.

To any one familiar with the too much neglected science of pneumatometry, or to any who have read the admirable essay of Prof. Elsberg, of New York, on its resuscitation by Waldenberg, it will be unnecessary to speak as to the value of the science as a means of diagnosis. It is not, in the article referred to, considered as a means of prevention or treatment of disease, and with the ancient instrument of Valentin, even as modified by Waldenberg, Eichhorst, or Elsberg, its value in diagnosis is its chief claim, and has been chiefly dwelt upon. Whether this instrument will do as much as that of Valentin, or less or more, experience can alone determine. Before describing it, will you permit me briefly to state what it is desirable to ascertain and what to accomplish? We will consider as established the distinction between phthisis and tuberculosis; the greater tendency to phthisis, of certain classes of persons, and that these classes are without great difficulty definable; that phthisis primarily and most frequently affects the apices of the lungs; that a local stasis in pulmonary circulation, of greater or less duration, precedes the more serious outbreak of the disease; that in phthisis, however slight a hold it may have on the pulmonary tissue, there must be impairment of either the inspiratory or expiratory current, or both, and the more recently established fact that there is a *change in the relation* to each other of the inspiratory and expiratory force (Waldenberg, *Berliner klin.*, 1861); that the force of the expiratory wave and the power of the respiratory muscles bear a direct relation to the strength of the vocal sounds. These points, I say, we need not discuss, as it is presumed that no vital difference of opinion exists regarding them. Yet I would like to add to them what many believe to be facts: that atalectasis frequently results from feeble breathing alone, and that a consequent inspissation of secretion may be the cause of inflammation and degeneration—and would especially quote what Ruehle has (not withholding his own belief) ascribed to Freund, that simple narrowing, as from injury to a rib, of the upper part of the thorax, may be a cause of phthisis; and I would add still further—what can be substantiated by experience—that atrophy of the respiratory muscles, through impairment of the circulation of air and blood in the apices of the lungs, may be a cause *of increase* of disease.

It is probable that all of these statements may be accepted without dispute, and for our present purpose we need not enter into any uncertain territory.

With reference, however, to the non-identity of phthisis and tuberculosis it may be remarked that some degree of confusion of ideas, even in the otherwise well informed, may be pardonable when those who should be authorities use the two terms almost as synonymous.

This non-identity, however, we assume to be now established by the school of pathology of which Felix von Niemeyer, so favorably known in this country, stands at the head —and we are the more impressed with the desirability of any new means of diagnosis when so vital a question as the existence of one or the other in a given case is prevented.

This, however, is not a claim of the pneumatometer, nor of the simple device which I present, although it is hoped that experiment may make it thus available. The question of tubercular disease as a pathological entity is introduced only because of the doubt still surrounding its origin, and its precedence or subsequence of inflammatory processes.

Rindfleisch, the recent and enthusiastic investigator, pupil of Virchow, has ascribed much of the present confusion on this subject to what are known on the Continent and in England as the Carswell plates, a series of elaborate and skillful anatomical drawings recognized as the most correct exponent of modern pathological research. In these the morbid processes which to one experienced observer are but the ordinary products of inflammation, the results of a catarrhal broncho-pneumonia, are to another, tubercular infiltration of connective tissue at the angles of the acini—a widely different interpretation of the same phenomenon. For our present purpose the question has importance chiefly as it bears upon the initiatory stage of disease. In both instances we are safe in asserting that, when the affection is chronic and of slow approach, the local stasis in the pulmonary tissue may be similar if not the same. There is obstruction of the minute bronchioles, there is partial or complete collapse of the vesicles to which these should supply air, there is diminished pressure on the capillary vessels, and a consequent dilatation and increased blood-supply, and finally (and I cannot so aptly describe the condition as by a quotation from a recent lecture of Prof. Loomis in another connection) there results a rapid cell-formation, distending the affected lobule to its normal size, and giving a condition closely resembling the third stage of catarrhal pneumonia.

Now, practically, to what do the facts adduced lead, if not to the conclusion that, in certain fatal forms of pulmonary disease, there is an initiatory period, then an initiatory step, into that territory where the skill of the physician is so generally and terribly baffled? In the contracted chest, the atrophied respiratory muscles, the persistently feeble breathing, the clogged and congested foci in lungs weak by inheritance or baneful habits, the catarrhal congestion, neglected because not greatly impairing ordinary usefulness, have we not, if they can but be detected, the *curable stage* of consumption?

I need not call to your attention the many cases you must have met in daily experience where a local impairment of pulmonary tissue has been discovered by accident, perhaps weeks or months before the outbreak of cough or other alarming symptoms, where you could hardly trust your own convictions in the face of robust and apparently sound physical health, and where you have afterward seen the slow development of the unconquerable disease. On the other hand, you have doubtless often seen these initiatory evidences of disease disappear under a changed regimen, vigorous out-of-door exercise, or the regular systematic use of such means as develop the chest and upper extremities.

Even startling are some of the cases that come to mind of even advanced disease yielding to hygienic measures when medicines had failed. I have within a few days seen a man who, in desperation, engaged—when emaciated by disease and pronounced incurable by his London physicians—to drive the Dover night-mail out of London, and undertook the hard duties of a hostler, in the hope of making more rapid his deadly disease, and yet who is to-day apparently sound and well. Similar cases must be common to every physician of experience, and show that there is something connected with fresh air and exercise that is capable of overcoming disease.

The experience of invalids in elevated regions, the benefits arising from the use of compressed air, and the indisputable fact that increase of the vital capacity of the chest is accompanied by development of the whole physical frame, point to but one explanation, viz., an increased communicability of the blood with the respired air; in other words, free expansion of air-cells, free capillary circulation in the lungs, and increased resiliency of tissue.

More than thirty years ago, in the days when the theories of Laennec and Louis were unquestioned and unrivaled in our profession, this idea was turned to practical account, and St. John Long,[1] a charlatan of London, with tanks of oxygenized air having innumerable mouth-pieces of silver, drew crowds and guineas and fame by his apparent success.

At about the same time appeared a small pocket-inhaler, similar to, and, I believe, identical with, that now known as Dr. Ramage's, which was vaunted as a preventive and cure of consumption. This tube is still for sale at the instrument-makers', and is about two inches long by one-half inch in diameter, and so arranged that inspiration is free and unimpeded, but expiration is accomplished with difficulty; the result being a throwing back, so to speak, of the volume of air, and its consequent compression into the remotest recesses of the lungs.

Its vital defect, that it rendered laceration of the diseased tissues possible, is one that unfortunately must, in some degree, apply to all instruments that require forcible inspiration or expiration, and one inseparably connected with the very necessary act of dilatation.

The pneumatometer, valuable as it would seem to be from the many available data collected by Waldenberg, is open to this objection to a degree possibly as great as the inhaler of Dr. Ramage. This instrument, already alluded to in this essay as the invention of Valentin, was described by him in his work on "Physiology" in 1844. It seems to be almost identical with the hæmadynamometer, which figures in so many modern treatises, and is constructed in a manner similar to all instruments which make use of the known resistance to pressure of the mercurial column. It may be most simply described as a column of mercury in a tube bent in the shape of the letter U. Forcible compression or forcible exhaustion of the air in one of the arms moves the column up or down, and the relation of these to each other, and the ratio to height, size, and physical conformation, have been established by valuable researches and experiments. As a means of treatment of disease, or of dilatation of imperfectly-developed lungs, it has not, I believe, claimed attention, but as a means of diagnosis is of great value. Of the facts brought to light by the researches alluded to, it will be necessary to speak again; but that in its use the strain upon a possibly weakened lung *must be* a maximum one, lies its defect. The exertion is against a dead wall of resistance. With an instrument made on the same principle, the occasional pleuritic pain, the more rare occurrence of a slight hæmoptysis subsequent to prolonged use, led me to experiment with the lungs of lambs and sheep immersed in water.

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[1] Jeaffreson, "Book about Doctors," 1860.

It is a difficult matter to obtain these without any lacerations or punctures, and even at the best the air will exude somewhat rapidly from the whole peripheral area. When rapidly inflated, it is easy to produce emphysema; if suddenly and forcibly inflated, there will be rupture of the air-vesicles, and I have seen the pleura pulmonalis stripped up over a surface of several square inches by this accident, even when the water in which it was immersed was of considerable density. In these cases my own breath was alone used for inflation, and it is a suggestive thought whether such results might not occur in the living tissues. While such a defect in an instrument making use of forced respiration is a necessary one to some degree, it is a vital one only when made so by recklessness or ignorance. Increase of the vital capacity of the chest would seem to be a uniform result of judicious use, and any one who has used a spirometer regularly and carefully will have been satisfied with the improvement due to the full and forcible inspiration and steady expiration. The latter instrument, the spirometer, is closely associated, as you are aware, with the name of Hutchinson, who published his elaborate views and experiments in 1846. In its best form it is simply an air-receiver immersed in water; as this is filled with air it rises, and an index records the vital capacity, and gives the ascertained average ratio to height of individual. It allows no measurement of power of expiration and none of inspiration, and therefore no comparison between the two, the great and important feature of the pneumatometer.

One of the most noteworthy facts connected with it is, that practice will allow improvement up to a certain point, beyond which no amount of exertion will increase it; that is to say, when the person's vital capacity, or the amount of air capable of being expelled, has been measured, there can be no increase by practice, and this is singularly uniform in healthy persons of given height.

Of the other instruments designed for either diagnosis or treatment—the cyrtometer of Woillez, the stethometer, the stethoscope, the stethograph, etc.—it would be as tedious as useless to speak; but, before recapitulating what it is desirable to do and what to accomplish, it is necessary to call to mind the well-known defects manifest to the trained ear in the incipient stages of pulmonary disease, and especially to the impairment of inspiratory power, the wavy and interrupted character of the inspiratory current, the prolonged action of the expiratory force, and consequent prolongation of the expiratory current, manifest often before other evidences of disease. The influence also of the exercise of the vocal organs in prophylaxis is important in the same connection. In the interesting appendix to the translated works of Laennec and Louis, by Dr. Bowditch, of Boston, statistics are given showing that occupations involving much use of the vocal apparatus, and consequent free expansion of the chest, are comparatively free from tendencies to consumption. He gives as his authority a memoir by M. Benoiston de Chateauneuf, published in the *Annals of Hygiene*, in July, 1831, founded upon the registers of Paris hospitals for five and ten years; the researches of Dr. Lombard, of Geneva, in the same *Annals* for January, 1834; and the work of Mr. Thackrah on the "Effects of Trades," etc., published in 1832. Since that time this has been established by observation in this country, and the axiom may be assumed to be correct that "trained singers rarely become consumptive."

It has seemed, perhaps, superfluous thus to go over ground familiar to every educated physician; but it enables us to answer more concisely the question, What is it possible, and what is it desirable, for instruments to do in connection with pulmonary disease? If we can detect by them the beginnings of the interrupted inspiration; the prolonged or otherwise impaired character of the expiration; if we can measure the vital capacity, or the muscular power, exerted in both health and disease; if we can ascertain correctly the relation of the inspiratory and expiratory current, and if we can do this by such means as are available, accurate, and inexpensive, we place within the domain of practical medicine a valuable assistant in diagnosis; and this it is *desirable* to do.

If, moreover, foci of inaction, of stasis, of congestion, which are but the tinder awaiting the spark of a lowered vitality to waken into disease, if these can be dispersed in even a tithe of all cases; if contracted chests, if atonied and atrophied respiratory muscles, can be developed; if vital chest-capacity, which means improvement of the whole physical condition; if renewed communicability with air, and therefrom improved regenerating power, can be given to the blood—then should we have combined in one what is both desirable and positive. And these are *possible*, for we know that physical exercise and proper hygienic measures have accomplished and will accomplish all we have enumerated; and, although no instrument, however ingenious or scientific, can adequately take their place, yet, as these are not always made available, it is possible in some measure to supply the deficiency, and even assist in preventing disease. The recent health-lift, which has fallen again into disuse, has demonstrated the possibility of development of respiratory power and chest-capacity. The spirometer can be authentically proved to increase the area of communication of the air and blood in the lungs, and the pneumatometer can determine the relation of inspiration to expiration, and the force-power of each.

It is, therefore, with diffidence that, after showing what is desirable to be accomplished, and what other instruments are capable of accomplishing, I present a new one as superior, or even equal.[1]

Here is a simple tube, of convenient diameter, with silver end-pieces, the one for inspiration, the other for expiration. A modified form of the sirene of Cagniard de la Tour, as improved by Dove, is so arranged as to indicate to the ear by musical note the strength, evenness, and duration of the respired air, and this with only the ordinary force of the common act of respiration. It, however, contains a spring of known resistance, determined in pounds and ounces, and an index, visible in the narrow slit along the side of the instrument.

With one ordinary full expiration of mine, the sirene runs from the lowest E flat of the piano to A flat above the sixth octave; with an inspiration, this is but a few notes lower. If I exert my full expiratory force, the index is driven to a considerable distance, and remains until pushed back, the sirene running several octaves above the highest of the piano. An inspiration, if carefully made, almost equals this in force in my own case. The graduated index in gilt, by the side of the open space, is marked in pounds and fractions of pounds.

Thus far, in testing the instrument, it has seemed to more than accomplish what was first designed. If it is desirable to ascertain the muscular force exerted in either act of respiration, the movable index will record it. If it is deemed unwise or unsafe to exert such force, the musical note will determine it to a satisfactory degree; but will show chiefly whether there is the slightest variation in the impulse which moves the sirene.

The sensitiveness of this will be apparent if we but partially exhaust the chest through the tube, and then remove it from the mouth; the movement of the hand across the opening, or the slight waving of the instrument in the air, is at once indicated by a change in the rising or falling musical note.

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[1] For Fig. 1, see last page of this Number.

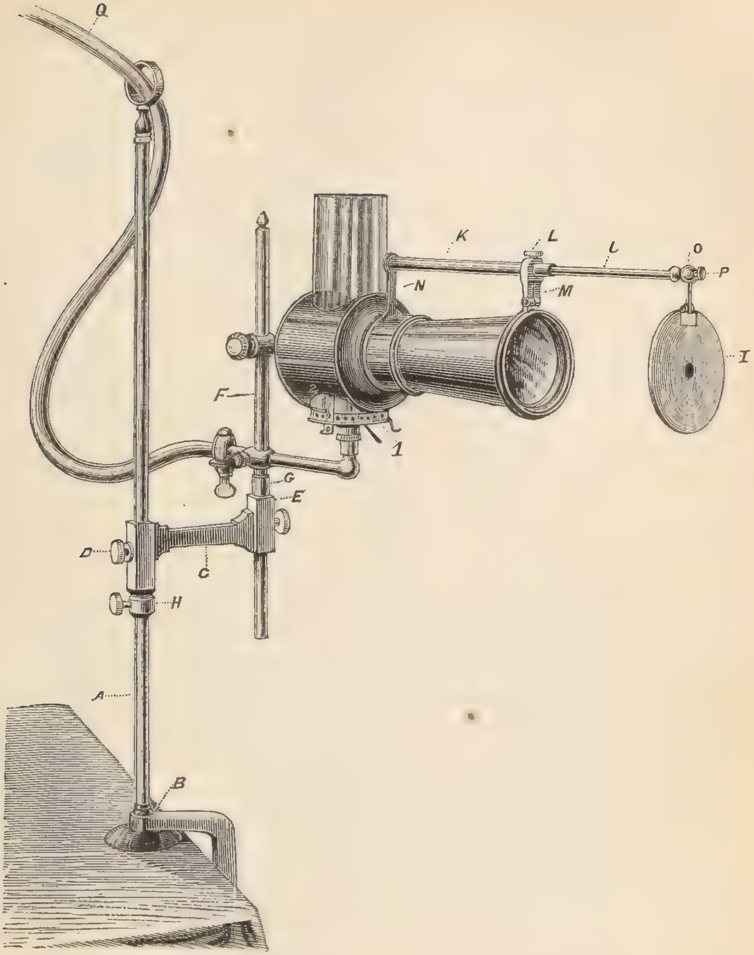
The effect of slight change in the force employed may be demonstrated in a very simple manner: Before you is a rubber bag capable of holding about twenty-five hundred cubic inches of air, under a pressure of six pounds to the square inch. When filled and connected with the instrument, the sirene runs evenly from its lowest note to one exceedingly high and shrill. The least pressure on the bag is at once indicated by change in this note of greater or less degree, according to the disturbance of the escaping current.

The cases thus far examined by this method have seemed to justify the presentation of the instrument as an available one in pneumatometry; and, as the statistics of Waldenberg may be readily adjusted for reference in kilogrammes instead of millimetres, the immense work of establishing a new table will not be required.

The second instrument presented is of better claim to scientific character; but, inasmuch as this can be best exhibited by a list of cases yet incomplete and now under observation, it will be at this time only necessary to advert to its object and method, and to exhibit its mechanism.

Briefly, we may say that, inasmuch as modifications of respiration (which are manifest the more early, the more cultivated the ear that is applied in examination) are the first evidences we often have of commencing disease, any instrument that can detect and record these modifications *must prove of service in diagnosis.*

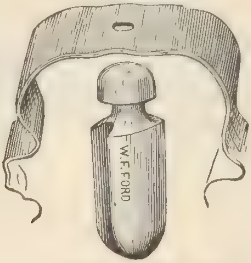
Description in very few words will show how much may be done in this direction. A clock having a single hand constructed so as to be altered in length by infinitesimal pressure is the simple secret. By expiring or inspiring through the rubber tube connected with it, the point of the hand, which carries a pencil or pen, is moved, while the index turns upon the pivot; and, if the breath be a perfect and even stream, the line must be a perfect circle; the least variation cannot fail to be recorded as a serrated edge on its periphery. It will afford me pleasure at some future day to show, with a complete list of observations, its sensitiveness to every respiratory defect.



Since the latter instrument was put into the hands of the instrument-makers, my attention has been called to Dr. Riegel's experiments with a stethograph, and to his work on respiratory movements (Wurzburg), not yet, I believe, translated.

Art. IV.—*A New Instrument.* By M. J. Moses, M. D.

I offer to the profession a new instrument, to be employed after division of the meatus. The instrument has the following advantages over other methods: 1. Simplicity of application; 2. Easy removal and replacement by the patient; 3. Painless separation of the cut surfaces. The first one I employed I made myself from so-called ebony, and though thoroughly subserving my purpose I found it to be non-durable, and probably capable of absorption. Those from which the cut was taken are of ivory. A better material would be hard rubber, which would be lighter and less expensive.



CASWELL, HAZARD & CO. N.Y.

Mode of Application.—The instrument is inserted; the sharp, beveled edge adjusted in the incision, the groove toward the roof of the urethra; the rubber band (made of very thin material) is buttoned through the hole, over the head of the instrument; the loose ends of the rubber band are then laid on each lateral aspect of the penis, and secured near the root of that organ by a piece of isinglass-plaster. The elasticity of the band permits the withdrawal of the plug for micturition or cleansing purposes, and its resiliency permits its easy replacement, and secures its retention as when first placed in position.

Clinical Records from Private and Hospital Practice.

I.—*Case of Gunshot-Wound of Chest.* By Oscar J. Coskery, M. D., Medical Superintendent of St. Joseph's Hospital, Baltimore, Md.

Martin S., aged fourteen, in perfect health, while gunning, April 11, 1874, in trying to pull his gun through a fence, shot himself in the right side. Gauge of gun, 16; shot No. 6.

Gun pointing at an angle of about forty-five degrees to side, and slightly backward. Load cut pieces about one inch in diameter out of coat, vest, shirt, and undershirt, which, together with load, penetrated chest. Clothes set on fire, which was put out by his father, who assisted him to walk about one hundred yards; and he was then brought about one mile and a half in wagon to the hospital. On admission, about one hour after injury, I found a ragged, powder-stained opening, three-quarters by half an inch, immediately in right axillary line, above sixth rib. Patient's underclothes were saturated with blood (should imagine about three ounces lost); hæmorrhage venous. Pulse 110, no collapse; complains of great pain near base of right lung. On auscultation of front of chest, found coarse *râles* over whole right lung, most marked at lower portion. Did not examine back, on account of hæmorrhage. Breathing 36 and painful; no cough or bloody expectoration. Ordered water-dressing, opium, and perfect rest. 5 P. M., respiration 40, staccato-abdominal, pulse 110; temperature, mouth 103.5°, axillæ 102.5°. On passing hand behind patient, found emphysema between scapulæ, and upon pressure over spine of right scapula, near upper angle, was a painful spot, in direction load should have taken. 10 P. M., complaining of great pain high up in right axilla, emphysema more extensive; slight hæmoptysis during night.

12*th.*—8 A. M., pulse 112, respiration 48; temperature, mouth 104°, right axilla 103°, left axilla 102°. Has passed a tolerably comfortable night. 12 M., sleeping from opium. Pulse 120, respiration 44; temperature, mouth and axilla 104°; slight crackling around wound; edges sloughy. On percussion, when lying on back, dullness extends two-thirds of the way toward front of chest. Hæmorrhage ceased, and a thin serous discharge present. 6.30 P. M., sleeping most of the time. While sleeping, the temperature in mouth was 103°; in each axilla 102°; respirations 30, easy and full; pulse 110; bronchial breathing over whole front of left side of chest; no cough or expectoration.

13*th.*—7 A. M., temperature, mouth 102°, axillæ 101°; pulse 110, respiration 30. 12 M., temperature 101°, respiration 36, pulse 110; feels comfortable. 6 P. M., temperature 103°, respiration 33, pulse 118; bronchial breathing and friction-murmur over whole front surface of right lung, more marked over upper half. Percussion-sound duller than natural over upper half; perfectly dull over posterior portion as far as could be examined.

14*th.*—7 A. M., temperature, mouth and left axillæ 101°; in right axilla 102°; pulse 104; respiration 30; slight emphysema of cellular tissue around wound; edges sloughy; discovered a shot beneath skin at lower angle of scapula. 12 M., bowels very loose, small and watery evacuations; pulse 120, respiration 30, temperature in mouth and axilla 101.5°. 6 P. M., respiration 28, costo-abdominal; pulse 115; temperature in mouth and right axilla 103°; in left axilla 102°; coarse crepitation and prolonged expiratory murmur over front of upper third of right chest—lower third clearing up; vocal fremitus absent over lower third.

15*th.*—7 A. M., has slept well. Diarrhœa ceased. Temperature, mouth 102°, axillæ 101.5°, pulse 100, respiration 26; on slight pressure around wound a small quantity of air escaped, but the emphysema, so marked during the first few days, has entirely disappeared. Removed one shot from near lower angle of scapula; chest bulging half an inch from true lateral line when lying on back, and perfectly dull on percussion, with absence of respiratory murmur; wound very sloughy, pieces of dead cellular tissue lying in it, and very offensive; appetite of patient good, and he feels comfortable. 6 P. M., pulse 104, respiration 28; temperature, mouth 103.5°, right axilla 103°, left axilla 102°; urine depositing mucus and lithates. Fluid, decanted off, gave sp. gr. 1024, clearing on application of heat; only tolerably dense deposit on addition of nitrate of silver; no reaction to sugar or albumen tests.

16*th.*—7 A. M., pulse 91, respiration 26; temperature, mouth 100.5°, left axilla 100°, right axilla 102°; large amount of very offensive purulent discharge from wound. Prolonged expiratory murmur still perceptible, but not so distinctly as some days ago. On passing finger through wound, and following the track of a portion of the load, found that it ran backward toward the lower angle of the right scapula, and detected a few shot lying beneath the scapula. 6 P. M., pulse

104, respiration 32; temperature, mouth 104°, right axilla 103°, left axilla 102.5°.

17*th*.—7 A. M., pulse 96, respiration 27; temperature, mouth 102°, axillæ 100.5°; almost cavernous, blowing-sound over apex of right lung. Discharge moderately free. 6 P. M., pulse 104, respiration 32; temperature, mouth 104°, axillæ 102.5°. Respiratory murmur clearer over front of lower two-thirds of right side of chest.

18*th*.—7 A. M., temperature, mouth 102.5°, axillæ 102°, pulse 96, respiration 28. 6 P. M., pulse 106, respiration 36; temperature, mouth 104.5°, right axilla 103.5°, left axilla 102.5°.

19*th*.—7 A. M., pulse 94, respiration 24; temperature, mouth 101.5°, right axilla 101.5°, left axilla 101°. 6 P. M., pulse 104, respiration 32; temperature, mouth 105°, right axilla 104°, left axilla 103°. Expiratory murmur over front of upper portion of right lung still very prolonged and blowing. Got first good examination of back of chest to-day. On percussion over back found almost total dullness. Auscultation revealed a semi-cavernous blowing-sound over whole upper lobe, with friction-sound over upper half of lung. No *râles*. Slight hæmoptysis this morning; no cough of moment.

20*th*.—8 A. M., pulse 90, respiration 28; temperature, mouth 102.5°, right axilla 102°, left axilla 101°. 6 P. M., pulse 120, respiration 36; temperature, mouth 106°, axillæ 105°. *Râles* over whole front chest. No cough or expectoration. Yesterday one of the wads of paper and to-day a small piece of woolen stuff came away with the discharge, which is now semi-purulent and reduced in quantity.

21*st*.—6 A. M., pulse 124, respiration 34; temperature, mouth 105°, axillæ 104°. 9 P. M., pulse 148, respiration 36; temperature, mouth 106°, axillæ 105°.

22*d*.—7 A. M., temperature, mouth 106°, axillæ 104°; respiration 44, pulse 144. 7 P. M., pulse 124, respiration 36; temperature, mouth 105.5°, axillæ 104°. A short, persistent, hacking cough, but no expectoration.

23*d*.—7 A. M., pulse 115, respiration 34; temperature, mouth 104.5°, axillæ 102.5°. Urine, sp. gr. 1014, clear amber, no albumen or sugar.

25*th*.—7 A. M., pulse 83, respiration 30; temperature, mouth

101°, axillæ 100°. Has passed a comfortable night, but complains of wound of entrance. Dullness on percussion over back not so marked, and auscultation reveals some return of respiratory murmur. Semi-cavernous respiration nearly disappeared.

26th.—Extracted three shot through opening at lower angle of right shoulder-blade.

27th.—Has passed a bad night. Respiration and pulse and temperature high.

29th.—7 P. M., pulse 114, respiration 28; temperature, mouth 104°, axillæ 103°. Hacking cough still persistent, but no expectoration. Prolonged expiratory murmur over front of left lung, but no crepitation.

30th.—Extracted two more shot from near scapula. Respirations heaving, abdominal, and left-sided.

May 1st.—After a sharp attack of cough, expectorated two mouthfuls of blood and mucus, followed by *streaked* sputa.

2d.—Cough very troublesome. 6 P. M., pulse 124, respiration 34; temperature, mouth 104.5°, axillæ 102.

4th.—Pulse 110, respiration 30. Cough so harassing that temperature could not be taken in mouth. In axillæ it was 99.5°. Extracted through original wound the piece of coat, about half an inch in diameter, followed by a very profuse and offensive discharge, expelled in gushes at every cough. Discharge very thick at first, becoming sero-sanguinolent. As discharge continued, cough ceased. From this time the boy suffered with hectic, but slowly improved, and first got out of bed on July 7th.

July 20th.—Another shot came from wound, which is nearly closed, but still discharging small quantity of pus. Patient getting fat.

August 29, 1874.—Left hospital to-day, condition as follows: Right chest-wall three-quarters of an inch less in circumference than left; sub-clavicular depression strongly marked. Respiratory murmur absent over upper third of right lung.

Admitted again September 15, 1875, and left in a few days, after having about an inch and a quarter of the outer table of the sixth rib removed for necrosis.

The treatment throughout was quinia, beef-tea, opium, perfect cleanliness, and plenty of fresh air. Patient exhibited before Clinical Society of Baltimore on March 24, 1876. Condition of chest then: Slight depression of right shoulder, with contraction of upper portion of right side of chest, lower portion bulging. No vesicular murmur over posterior portion of apex of right lung, but some bronchial breathing, with slight respiratory murmur over front. Patient has followed avocation of barber's apprentice for last nine months, and is in good general condition.

There is no doubt, in my own mind, that the load was divided at the time of injury, a portion passing backward under the skin, while the balance penetrated the upper portion of the right lung.

II.—*Case of Cure of the Morphia-Habit.* By George M. Schweig, M. D., New York.

In the beginning of April, 1875, Surgeon H. M. Wells, of the United States Navy, brought to my office a patient, Mr. C., aged forty-seven, married, real-estate broker, with the following history:

In 1868 the patient had suffered for many years from hæmorrhoids, in addition to which an anal fissure had for some time existed. For the relief of these conditions he entered the New York Hospital. While there, he had an operation performed (if he remembers rightly, some species of cautery), during the recovery from which he suffered much pain and consequent irritability and insomnia. It appears that at this time hypodermic morphia-injections were resorted to by some of the staff, as an anodyne, and probably also as an hypnotic. After his discharge from hospital, a good deal of nervous irritability remained, which caused him to continue the injections irregularly, but daily, for about a year. He then, by a strong mental effort, succeeded in breaking off the habit. Before a second year had passed, however (within two years from his discharge from hospital), the piles began to trouble him again. With this, the nervous irritability returned more strongly than before, and, after he had abstained from it for more than a year, Mr. C. resumed the morphia. This was in 1870. At first he took an injection every evening only. Gradually, however, both quantity and frequency were increased, until, for over a year previous to my seeing him, he had every day taken from four to six injections, the aggregate quantity consumed daily ranging from thirty-five to fifty minims of Magendie's solution.

For a long time (I was unable to elicit exact dates) prior to his first visit to me (April 8, 1875) he had had functional cardiac palpitations, of so violent a nature as to forbid even very slight bodily exertions. Thus, he was unable to walk more than half a block without resting. He had for many years had organic stricture (never had gonorrhœa), and for some time had suffered from a secondary cystitis. As a result of these conditions, he was obliged to get up several times each night for the purpose of urinating.

An examination on the occasion of his first visit to me gave the following results: Height nearly six feet; large frame; original *physique* evidently fine. Complexion sallow, colorless. General condition excessively low; broken-down appearance; great feebleness; entire loss of energy; physiognomy expressive of anxiety and hopelessness; nutrition very poor; muscles shrunken and flabby; skin baggy everywhere. The urethra, on examination, was found in an hyperæsthetic condition, the stricture in the *pars membranacea*. A No. 2 (French) bougie was the largest instrument I was able to pass on this occasion, although subsequently the stricture proved readily dilatable.

Almost the entire surfaces of the upper arms, the extensor surfaces of the forearms and those of the thighs, were a mass of hard, purplish cicatricial tissue, here and there slightly ulcerative—the result of the thousands of hypodermic injections that had been made.

But the most prominent symptom was Mr. C.'s excessive "nervousness." He could not sit still for more than a minute or two at a time, and even then his legs and hands were continually moving, there being, however, not the remotest trace of anything of a choreic nature in any of the movements. He would get up, walk nervously up and down the room, then sit down again for a moment, etc. Even when asleep he moved his legs spasmodically every few minutes—as, indeed, the irritability predominated in the sphere of the lumbo-sacral nerves—this being, no doubt, a reflex phenomenon of the urethro-vesical and anal troubles.

There was considerable constipation, the evacuations being attended with much pain.

Appetite and digestion were much deteriorated.

Physical exploration of heart and lungs gave negative results.

The pulse ranged in the neighborhood of 90; very full and strong. On the slightest physical exertion it would shoot up to 110 or still higher, with increasing fullness.

The urine contained much vesical mucus; was loaded with phosphates; free from albumen; reaction very slightly acid; specific gravity not taken.

Moderate rectal pressure on the part of the patient brought to view about half a dozen large hæmorrhoidal tumors, the frequent loss of blood from which helped still more to deplete and enfeeble him.

For a long time prior to his visit he had been unable to give any attention to business. Physically and mentally, if not also morally, he was a wreck, illustrating strikingly the terrible effects of the habit to which he was a slave.

When I took charge of the case, the patient's condition was too low to admit of anything like heroic treatment. I therefore concluded to put him on a tonic course, and endeavor to build him up somewhat before attempting to withdraw the morphia. Meanwhile, I advised him to endeavor gradually to reduce his daily allowance, as much as he should be able, and directed my attention mainly to strengthening him and relieving his other ailments as far as possible. By means of strychnia, iron, etc., and electric baths, administered daily, I succeeded in very much improving his physical condition. He slept, ate, and digested better; increased in weight; gained in vigor of body and mind. At the same time I gave attention to the stricture, which soon admitted of the introduction of a full-sized sound (a No. 15 being the full capacity of the meatus); the cystitis yielded spontaneously as the cause was being removed. The heart's action soon became normal. But through all this his best efforts to reduce the morphia were unavailing. Neither chloral nor bromides, administered in very large doses, could supply to him its place. During three months of this treatment (from April 8th to July 8th) he had been able for a few days only to reduce his allowance, never getting below twenty-nine, and often requiring fifty minims a day.

In the beginning of July I had a consultation with Dr. Wells, and we came to the conclusion that he was then in a sufficiently good condition to warrant heroic measures.

Accordingly, on July 8th, I entered on a course of treatment which was attended with the most satisfactory results, effecting in less than two weeks a thus far permanent cure, and of which I will now proceed to give the details.

Before doing so it may be desirable, however, to convey to the reader some idea of the manner in which Mr. C., who kept a minute diary in this respect, made use of the drug. For this purpose I copy from his diary as follows:

June 18, 1875.— 5 A. M. gtt. v. (Magendie's solution.)
12 M. " vij.
5 P. M. " viij.
9 P. M. " x.
12 M. " vij. gtt. xxxvij.
19*th*.—11 A. M. gtt. x.
6 P. M. " x.
10 P. M. " xv.
12 M. " xv. gtt. l.

It will be seen from this that neither as to individual nor aggregate quantities, nor yet as to time or frequency, was there any regularity in the habit.

To resume: Realizing the necessity of keeping the patient under constant surveillance, day and night, during the treatment that I was about to institute, I was fortunate in procuring to this end the services of Dr. E. S. Piercy, who, with an assistant to relieve him during the hours necessary for sleep, kindly undertook this task.[1]

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[1] The patient's residence being in Brooklyn, I caused him on July 8th to hire a room in my immediate neighborhood, so as to enable me to see

On July 8th, then, Mr. C. had injected gtt. v at 6 A. M.; a like amount at 2 P. M. The same evening I took from him his till then inseparable companion—the hypodermic syringe. Treatment was now begun as follows:

July 8th, 9 P. M.—Zinc. valer., gr. iss; patient pretty quiet.

10.30 P. M.—Restless; chloroform (Squibb's), minims xxij hypodermically; also zinc. valer., gr. j per os.

11.10 P. M.—Very fidgety; inhalation of ether (Squibb's æth. fort.) for eight minutes

11.20 P. M.—Sod. bromid., ʒ j.

11.30 P. M.—Sod. bromid., ʒ ss; also inhalation of chloroform (about ℥ ij).

11.40 P. M.—Still very restless; chloroform (hypodermic), mm. xxv.

11.45 P. M.—Restlessness uncontrollable; obliged to give him an hypodermic of gtt. vij Magend. solution.

12. M.—Zinc. valer., grs. iij, and sod. bromid., ʒ ss.

9th, 12.30 A. M.—Sleepless and irritable; inhaled ether, ℥ iv, and chloroform, ℥ ij, with entirely negative effects.

Seeing no prospect of giving him sleep that night without resorting to the accustomed hypnotic, I gave him at 12.40 A. M. sol. Magend., mm. x (hypod.).

1.15 A. M.—Sol. Magend., mm. v (hypod.); he quieted down after this and slept from 2.30 to 5 A. M. At 6 A. M. he got five minims more. Slept from 6.30 to 10 A. M.

10 A. M.—Tinct. digital., ʒ ss.

11 A. M.—Zinc. valer., gr. iss.

12 M.—Tinct. digital., ʒ ss.

1 P. M.—Zinc. valer., gr. iss.

2 P. M.—Tinct. digital., ʒ ss.

2.20 P. M.—I was compelled at this time, on account of his insupportable restlessness, again to have recourse to the morphia, of which he received seven minims hypodermically. I concluded now to try something else. Accordingly, I gave him at

2.30 P. M.—Extr. fl. veratr. virid. (Squibb's), gtt. x.

3 P. M.—Extr. fl. veratr. virid., gtt. xj.

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him frequently both day and night. He remained there from July 8th to July 19th.

3.30 P. M.—Extr. fl. veratr. virid., gtt. xij.

I will here state what perhaps I should have mentioned before, that on the previous evening I had attempted to bring him under the influence of this drug by administering half-drachm doses of it, which were promptly rejected, however, by the stomach. It was because they were not retained that I did not think it worth while to allude to them before now. The doses administered as above had a nauseating but no sedative effect whatever, and I was once more compelled, at 4.40 P. M., to give him five minims of Magendie's solution.

It appears that thus far none of the remedies employed had had the power to stave off the irresistible craving for morphia that compelled me to allow him this again and again. At this period Dr. Piercy suggested to me the persistent and to a certain extent unlimited administration of bromides, until the desired end should have been accomplished, if this were possible. I gladly availed myself of his suggestion. Accordingly, the bromine treatment was begun and carried out as follows:

6.30 P. M. (*9th*).—Sod. bromid., ʒ ss; the same dose was administered every half-hour until 11.30 P. M. inclusive; after this as follows:

10*th*, 12.30 A. M.—Sod. bromid., ʒ ss; the same 1.30, 2.15, 2.45, 4, 4.45, 6, 6.30, 7, 7.30, and 8 A. M. The bromide of calcium was then given in half-drachm doses at 9.30, 10, and 11 A. M., and at 12 M. He had during all this time, though without sleep, been pretty quiet. Now, however, over nineteen hours having elapsed since he had had any morphia, the irresistible desire once more, and for the last time, overcame him, and at 12.15 P. M. he received his final dose of five minims of Magendie's solution. At 1, 2.30, and 3.30 P. M. each, ʒ ss calc. bromid. At 4 P. M. an electric bath. Then again ʒ ss calc. bromid. at 6, 7, 8.15, 9, 10, and 11.25 P. M. At 11.30 P. M., having had no sleep since 10 A. M. of the preceding day, he went to sleep for the first time without the aid of the morphia. He slept almost continually, and without the further administration of any thing until 5 P. M. the following day—or seventeen and a half hours. He then got up and took a walk, accompanied by Dr. Piercy and myself. About

11 P. M. he again became uneasy, when treatment was resumed as follows:

11*th*, 11.30 P. M.—Sod. bromid., grs. xlv.

12*th*.—Sod. bromid., ʒss at 12.30, 1.45, 2.30, 3, 3.45, 4.45, 5.45, 6.45, 7.45, 9, and 10 A. M. He was then pretty quiet. Had electric bath during the afternoon. In the evening I put him on ʒss doses of potass. bromid., which he took at 7.45, 10.15, 10.45, 11.15, and 11.45 P. M. The same on July 13th, at 12.15, 12.45, 1.15, 1.45, 2.15, and 3.15 A. M. Fell asleep at 3.30 A. M., and slept until 12.25 P. M. He then got up, took a walk, and was quiet until midnight, when ʒss doses of potass. bromid. were resumed, and continued on July 14th at 12.30, 2, 2.35, and 3.30 A. M. Fell asleep at 4, and slept till 11 A. M. Took electric bath in the afternoon. Quiet and feeling well all day.

15*th*, 12.30 A. M.—Potass. bromid., ʒj; also ʒss at 2.30 and 3.30 A. M.; slept from 4.45 A. M. to 2.30 P. M. Took electric bath in the afternoon. In the evening took ʒss doses of sod. bromid. at 8.30, 9, 9.30, 10, 11, and 12 o'clock.

16*th*.—Continued same at 1 and 1.30 A. M. Slept from 2.30 to 11.30 A. M. Took sod. bromid., ʒss at 6.50 and 7.50 P M. Slept from 8.30 P. M. to 10.30 A. M. of July 17th. On the evening of this day took ʒss sod. bromid. at 6.30, 7.30, 8, 9, and 10. 30 P. M.

18*th*.—Slept from 2.30 A. M. until morning (exact time not recorded). Quiet all day. In the evening resumed sod. bromid. in half-drachm doses, at 6.30, 7, 7.30, 8, and 9.15 P. M. Slept from 9.30 P. M. to 8.30 A. M. of the 19th.

19*th*.—On the morning of this day Mr. C. assured me that he had for some days past felt not the slightest desire for morphia, and that, if placed at his free disposal, he would not touch it. He felt apprehensive, however, that the piles would induce afresh an irritability that might again compel him to have recourse to the dreaded drug. Accordingly, I sent him home at noon (July 19th), and promised him to operate for the piles in a few days. In the mean time I ordered him a tonic mixture containing strychnia, iron, and valerian, and also an ergotine-mixture. On the afternoon of July 24th I called on him at his residence, where, in the presence of Drs. Wells, Stratford, and Piercy, I removed the hæmorrhoidal tumors by means of galvano-cautery. The operation was performed rapidly, without any anæsthetic, and with but little pain to the patient. The only preparations for the operation were, a dose of castor-oil early the same morning, and a glass of brandy immediately before operating. He bore it very well. I may as well state now that the wounds healed kindly without any after-treatment whatsoever, with the exception of a piece of muslin dipped in olive-oil, applied immediately after operating. I visited him again next day, and found him doing very well.

On July 26th I was sent for late at night to see Mr. C., who was said to have gone crazy. I did not see him, however, until next morning. I then found him in state of acute mania, dangerously violent, full of hallucinations. Whether this condition was the result of the sudden withdrawal of the morphia, the shock of the operation, or a cerebral anæmia superinduced by the large quantities of bromides that he had taken, or, most probably, of these three influences combined, I know not. I met Dr. Wells the same day at the patient's house, and as the result of our consultation the patient was placed on phosphorus, cod-liver oil, brandy, and milk-punches. A strong man was kept in constant attendance, to prevent him from doing any mischief (he had attempted to jump from the window, etc.). Under this treatment he recovered his reason completely in about ten days.

For about two months after this Mr. C. came to see me occasionally, in order to obtain relief for some little trouble, often more fancied than real. He also continued electric baths as a tonic, at first every few days, later on once a week, until very recently. He is in the enjoyment of perfect health, ruddy-cheeked, strong, and has gained about thirty pounds in weight. He has long since ceased to take medicine. The piles do not trouble him. He eats and sleeps well, and attends regularly to his business. *He has not the faintest desire for morphia.*

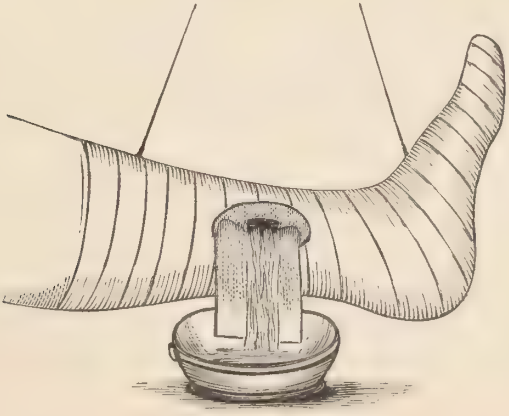
The largest quantity of bromides that he had taken during any twenty-four hours of treatment was fifteen drachms, between 6.30 P. M. of July 9th and 6 P. M. of July 10th.

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

Death from Paralysis of the Heart due to Rupture of an Abscess into the Pericardium.—A patient entered the surgical department of the hospital, suffering from the effects of a pistol-shot wound in the chest. On entering there were no symptoms of special urgency, but, in a few days, it became apparent that pus was being formed. There was no marked prostration, when, suddenly, the patient died. At the *post-mortem* examination an abscess was found in the mediastinal region, which had opened into the pericardium, and bathed the surface of the heart in pus. The diagnosis of the case was made at the time of death.

Treatment of Cases of Compound Fracture, with Method to prevent the Discharges from passing between the Splint and the Skin.—When a case of compound fracture has been placed in a plaster-of-Paris bandage or other immovable dressing, and the requisite fenestra made, a never-ending cause of annoyance is the passage of the purulent discharge between the skin and the dressing. Different methods have been suggested and adopted, such as plugging the edges of the fenestrum with cotton-wool, etc.; but the results obtained are only partially



successful, as the packing has to be continually removed. Dr. J. C. Pennington, the house-surgeon, eventually hit upon an idea which, in practice, has been proved to obviate all of the former difficulties. It consists, as will be seen by the diagram, in causing a piece of oil-silk to adhere to the skin beneath the wound, and, in this manner, to conduct the discharge into a vessel placed to receive it. The oil-silk is secured to the skin by first brushing over it the ordinary collodion, and then applying the oil-silk, and finishing by applying another coat of collodion on the surface of the oil-silk.

Treatment of Epistaxis by Injections of the Persulphate of Iron.—A patient suffering from disease of the bones of the nose, a consequence of syphilis, was periodically attacked with epistaxis. He was relieved by plugging the nares by means of Belocq's canula, but considerable annoyance was encountered in the introduction of the instrument from the displacement of the carious bones. Injections of a solution of persulphate of iron (liq. ferri persulph., ℥j; aqua, ℥ij) were then made, with happy results. When the first injection was carried into the nose, coagulation of the blood took place nearly immediately, but it soon became manifest that the bleeding was not controlled. Additional injections were then made, until both the nares were firmly plugged by the coagulated blood. It was apprehended that considerable difficulty would be experienced in the removal of the coagula, but this apprehension was groundless, as, within thirty-six hours, the fibrine contracted sufficiently to allow of the clots dropping out without any surgical interference.

Sarcoma of the Pleura; Sanguineous Effusion.—A patient entered hospital with no special history. An examination of the chest revealed an extensive effusion into the right pleura. Different therapeutic measures were resorted to to cause absorption, but without avail. Eventually the chest was aspirated, and a large amount of bloody fluid withdrawn. This operation was repeated several times with the same result, and without the occurrence of empyema. Eventually the patient died, and at the *post mortem* it was found that sarcoma of the upper part of the pleura existed.

ST. FRANCIS'S HOSPITAL.

Treatment of Femoral Aneurism by Esmarch's Bandage.—A patient is at present in hospital undergoing treatment for femoral aneurism, by means of Esmarch's bandage. The aneurism is situated immediately beneath Poupart's ligament, and is as large as a man's fist. The treatment consists in employing the elastic bandage, and keeping it in position for half an hour each day. During the application of the bandage pulsation is controlled, but on its removal it recommences. The method has been practised for about a week, and so far there seems to have been slight improvement.

Treatment of Erysipelas by Hypodermic Injections of Carbolic Acid.—A case of erysipelas, commencing on the back of the neck, developed a tendency to spread downward on the back. It was proposed to try the influence of carbolic-acid injections on the disease, and, for this purpose, the needle of the hypodermic was introduced at points an inch and a half apart, and a few drops of carbolic acid injected. The line of injections was situated beyond the border of inflamed skin, but the treatment did not result in checking the spread of the disease. The application of the solid stick of nitrate of silver was equally without avail.

CHARITY HOSPITAL.

Treatment of Chancroids by Nitrate of Zinc.— Chancroids have been recently treated by the application of nitrate of zinc. In some cases it appears to have a very beneficial action.

Gonorrhœal Rheumatism.—A case of this relatively rare disease has been recently under observation. The patient has had six attacks of gonorrhœa, and following each attack was one of rheumatism, affecting principally the knee and ankle joints. The rheumatism ceased with the cure of the gonorrhœa.

SMALL-POX HOSPITAL.

Gangrene of Foot following Variola. — A patient passed through an attack of confluent small-pox without any serious symptoms. Two or three days after desiccation had commenced, an attack of erysipelas appeared on one of the legs. This was followed shortly after by decrease of temperature in the foot, and eventually the other signs of gangrene became manifest. The line of demarkation was readily formed, and within a short time a cure established. The gangrene involved only the anterior part of the foot and leg.

Pneumonia.—The epidemic is not specially severe this season, but within a short period three cases of croupous pneumonia have occurred and resulted fatally. There have been on an average from seventy to ninety cases under treatment during the past winter.

Correspondence

The New Sphygmograph.

CINCINNATI, *March* 16, 1876.

EDITOR NEW YORK MEDICAL JOURNAL:

IN a communication published in the March number of your JOURNAL, I find that a claimant armed with a *patent* has arisen for my new sphygmograph. I am sure I never heard of Dr. E. A. Pond, of Rutland, Vermont, or of Dr. Wallace R. Pond, of San Francisco, California, until their names appeared in the last issue of the NEW YORK MEDICAL JOURNAL. I do not consider that there is any question of priority between Dr. Pond and myself. The distinctive features of my invention have, I trust, been sufficiently set forth in my descriptive article. Whenever a mechanism is produced which, upon trial, proves superior to my sphygmograph, I shall be ready to hail it; for excellency of invention concerns us as physicians more than priority in the use of a principle. We should like to see a description of the *sphygmograph* into which Dr. Pond asserts he has converted his "sphygmoscope," with examples of tracings taken by it. The publication in the *Boston Medical and Surgical Journal* for December 23, 1875, to which we are referred, only contains a description of the latter instrument, with a statement merely that "a recording-attachment had been added."

In the summer of 1874 I conceived the idea of my sphygmometer, and soon after began to build upon it the conception of my sphygmograph. I commenced experimenting, and in the early autumn I showed to friends the beautiful undulations in the glass tube caused by pulsations of the artery. In December, 1874, I obtained tracings of the radial pulse. In the first part of 1875 my sphygmograph was in good working order, and as early as March I was taking tracings of my patients. At the meeting of the American Medical Association, in May, I exhibited and described the instrument, and showed a large number of its tracings. In the *New York Medical Record* of May 22, 1875, is an abstract of the paper read. At the meeting of the Ohio State Medical Society, in June, I informally, as I preferred, showed the instrument to a large number of the members, and took several tracings. If necessary, I could make other exhibits, and substantiate all.

I worked, independently, at the problem, and produced an efficient mechanism. It would be humiliating if the principles of this mechanism should now, on the threshold of their usefulness, be fettered by a *patent*.

Respectfully, A. T. KEYT.

Proceedings of Societies.

BROOKLYN PATHOLOGICAL SECTION.

Stated Meeting, February 24, 1876.

DR. L. D. MASON presented a portion of perforated intestine, with the following history: P. C., aged thirty-five, Swede, seaman, entered the Long Island College Hospital October 11, 1875 (service of Dr. Dodge). He had retention of urine three weeks ago, lasting twenty-four hours, relieved by use of a catheter, which was required for ten days.

On admission, was found to be passing pus *per urethram* before and after urinating. Complains of cold sweats and a tender spot in the perinæum. "Perineal abscess" was diagnosticated, and he was ordered citrate of potassium gr. xx t. i. d.

On October 13th a flexible catheter, No. 5 English, was passed with difficulty, and a severe chill followed, with temperature 104°. Ordered quin. sulph. grs. x, to take at once; quin. sulph. grs. iv, every four hours, with tr. aconiti rad. gtt. ss every two hours, and a poultice to perinæum. On October 14th the abscess pointed, and was opened, with great relief to the patient, the temperature dropping to 100°.

On October 15th he was very easy, with the exception of insomnia, for which he had a mixture containing chloral at bedtime. Up to December 31st no momentous change appeared. The local dressing had been carbolized oil, subsequently changed to ung. hydrarg. dil. At this date he passes water very well, only a drop or two oozing *per fistulam.*

On January 5, 1876, Dr. Mason took the service, and on closely examining the patient he noticed the following points:

1. General progressive emaciation, with irregular chills and profuse sweats.
2. Want of healthy reparative action in the wound.
3. A somewhat painful induration in the left iliac fossa.

The first two points could be easily explained by the coexisting tubercular diathesis. The third point was the subject of much conjecture.

This painful locality was circumscribed, limited to a spot about midway between the spine of the pubes and the anterior superior spine of the ilium, well above Poupart's ligament. No distinct fluctuation existed, and firm pressure alone served to make out its circumscribed character.

January 5th.—He has severe chills, and is given tr. ferri chlor., with quin. sulph. and McMunn's elixir opii, gtt. viij every four hours, which treatment appeared to relieve the patient. Tr. iodini was applied to the skin over left iliac fossa, and "full extra diet" was ordered, which includes milk, eggs, broth, and ale.

10th.—Severe vomiting, apparently stercoraceous, occurred to-day, the fecal odor being well marked. Constipation has existed for a few days past, with an abdomen slightly tympanitic and tender. The patient has no special pain, and his decubitus is not characteristic of peritonitis. Turpentine-stupes and enemata were used, and bismuth carb. with morph. sulph. gr. ss every four hours, was given *per orem.* The vomiting and constipation were completely relieved.

15*th.*—Several normal passages have occurred since the last record, but the general condition remains the same. He still has irregular chills and profuse sweating. Ordered a mixture containing sulphate of quinia, with muriatic acid.

24*th.*—Chills and sweats are constant; patient very weak. Treatment and diet the same.

February 10*th.*—A small blister formed this day over the painful spot in the iliac region.

13*th.*—A fluctuating tumor has suddenly appeared in the left iliac fossa, directly under the blister, and occupying seat of induration. The skin is very thin, and, a fine exploring-needle being introduced, gas of a strong fecal odor escaped, with a few bubbles of fluid. The tumor at once disappeared, and the skin became flat and lax. No further exploration being deemed advisable without consultation, Drs. Wight and T. L. Mason, of the surgical staff, saw the patient at 1.30 P. M., February 14th. The point of puncture had then enlarged to the size of a silver probe, and fecal fluid was oozing therefrom. The diagnosis of "stercoraceous abscess" was agreed upon, and non-interference advised, the part being kept clean, and carbolized oil used as a dressing.

16*th.*—By this time, the aperture, having rapidly enlarged, is the size of the thumb-nail, evidently opening directly into the pelvis, the pulsation of the femoral artery, as it passes under Poupart's ligament, being easily seen by looking into the abscess. The discharge, of "pea-soup" color and consistency, is oozing constantly.

17*th.*—A fluctuating tumor appears to-day in an *exactly symmetrical position* in the *right* iliac fossa, pressure on which forces fluid out of the opening on the left side. The diagnosis of "circumscribed abscess" was abandoned, and that of "general pelvic infiltration" was favored, with probable ulceration of intestine, as the gross characters of the discharges were decidedly intestinal.

On February 19th the right tumor had enlarged, and finally opened by ulceration, showing a cavity similar to that on the left side. The patient is very weak, and takes nourishment with difficulty; has aphthæ on tongue and palate, very sore mouth, and diarrhœa. Was given concentrated nourishment and mouth washed with tr. ferri mur. in water.

February 23d.—Patient died this afternoon of asthenia, having failed gradually to date. Autopsy was made by Dr. B. F. Westbrook, fourteen hours after death, with the following result:

Rigor mortis slight; cutaneous surface yellow and cachectic. In each inguinal region is a fistulous opening, with livid, undermined, inverted edges; a dirty-yellow fetid discharge issues on pressure. A similar opening exists in the perinæum.

Head.—No abnormal appearances.

Thorax.—Heart and pericardium are normal. At either apex firm pleuritic adhesions; lung-substance indurated, and filled with cheesy and calcareous nodules. A small cavern exists at right apex; bronchial glands indurated, but not enlarged.

Abdomen.—The peritoneal surfaces are glued together, the adhesive material being soft and recent. In the left inguinal region the sigmoid flexure of the colon is held forward and upward in contact with the abdominal wall. Colon is full of scybala, with channels between, allowing the passage of fluids.

While separating the gut from the abdominal wall, an abscess was opened, extending across the hypogastrium to the right inguinal region, and down into the pelvis between the bladder and rectum, for three inches below the brim.

It communicates *in front* with the two fistulæ, *behind* with the upper end of the rectum; the latter opening was small, admitting only an ordinary probe. *No communication whatever could be found between the large abscess cavity and the perineal fistula.*

The cavity would contain about one pint, and at the autopsy was half full of a dark-yellow stercoraceous fluid.

The intestinal walls were very pale, and no evidence of disease was seen.

The mesenteries were indurated, but not enlarged.

Liver and spleen normal. Right kidney enlarged. Left was contracted, with several cheesy masses in the cortex. The supra-renal capsules were on the *anterior surface* of the kidneys.

Two sinuses opened from the prostatic urethra into the perineal abscess, their edges ragged and cheesy in appearance. No stricture was found.

The perineal abscess was extensive, reaching up to the ischio-rectal fossa on each side, as far as the pelvic fascia would permit.

Bladder normal.

Dr. L. D. Mason submitted the following suggestions to the consideration of the section :

1. The period of intestinal perforation.

2. The slight degree of pain, and absence of the decubitus of peritonitis.

3. That the pelvic infiltration and prostatic abscess were *coincidences*, not dependent on each other.

4. The predisposing cause of the perforating ulcer and of the prostatic abscess was the same, viz., the tubercular diathesis.

In reply to a question of Dr. Rockwell, Dr. Mason thought it not probable that the perforation could be *post-mortem*, as there was fecal discharge from the fistula three weeks before death.

Dr. Rockwell mentioned a similar case in a lady where the tumor had been called *ovarian*, and in which a urethral fistula coexisted. At the autopsy, an abscess holding a quart was found. She had had the trouble three years, but had been able to attend to her social duties. She was the subject of struma.

Dr. Rushmore had met with two previous cases, where a high grade of peritonitis was free from pain.

Dr. Scherwell had seen a number of cases in the Vienna hospitals, where death occurred in puerperal peritonitis, even when large exudations had been found *post mortem*, where no pain, severe at least, was observed during life.

Dr. J. C. Hutchinson said it would be well to see if the breaking down of a tubercular nodule had made the perforation.

On motion, the section adjourned.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 16, 1876.

Dr. S. S. Purple, President.

Diphtheria.—Dr. C. E. Billington read a paper on diphtheria, and gave the results of his treatment upon one hundred and twenty-four dispensary cases, and seventeen cases occurring in private practice. He expressed himself as holding to the view that diphtheria was at first a local disease, which afterward infected the system and became constitutional.

The main point of the paper was the fact that the author had been exceedingly energetic in practising the local application of carbolic acid and lime-water by means of a spray-apparatus. The formula he employed was:

℞. Acid. carbolic.,	♏ x.	
Aq. calcis,	℥ iv.	M.

He was unable to treat in this manner children under two years of age.

The internal treatment consisted in the use of the tincture of the perchloride of iron, alternating with the chlorate of potassa, every two hours.

Dr. Billington was associated in the treatment of the dispensary cases by Drs. Comstock and Darken.

Dr. Barry remarked that he thought that diphtheria was strictly a constitutional disease. He believed both in local and internal medication. The local treatment which he employed was either the vapor of iodine or the insufflation of a powder made up of sulphate of iron, chlorate of potash, and sal-ammoniac. The insufflation was practised every two hours. The constitutional treatment was of the supporting kind, and carried to its fullest extent.

Dr. Burke coincided with Dr. Barry as to the systemic nature of the disease. Dr. Burke had used bromine combined with bromide of potassium, as recommended by Dr. Thompson, and found it of doubtful efficacy. Some cases apparently did well with it, while others were not benefited.

Dr. Hanks was in accord with the views advanced by Dr. Billington, and thought that great credit was due Dr. Burke for the persistence in carrying out his method of treatment. Dr. Hanks's experience with diphtheria extended back for a period of fourteen years. At that time he was in New England, and the prevalent treatment there was the application of nitrate of silver to the throat twice a day, combined with the internal use of quinine, whiskey, and tincture of iron. Externally, poultices were placed around the neck. In spite of this energetic treatment, one-half of the patients died, and since that time he has given up the use of escharotics to the throat, except in cases of ulceration coming on after the first week. He was strongly in favor of enforcing a rigid quarantine, as by that way he thought that the ravages of the disease might be lessened.

Stated Meeting April 6, 1876.

Dr. S. S. Purple, President.

The Mechanism of Lateral Curvature of the Spine.—Dr. A. B. Judson read an excellent paper on this subject, and presented a preparation which demonstrated his views. The preparation consisted of all of the spinal vertebræ, arranged in a framework, and having an elastic rod of brass passing through the spinal canal. When pressure was made on the end of this rod, the vertebræ assumed the position of a single lateral arch ; but, when a vertebra situated about the middle of the column was rendered immovable, a double or compensating curve, like the letter S, was formed. The apparatus demonstrated that the main element in lateral spinal curvature was the weight of the head and upper extremities pressing down upon a vertebral column imperfectly braced by muscular support. Dr. Sayre complimented Dr. Judson very highly upon the ingenuity of his apparatus, which demonstrated a most important element in lateral spinal curvatures. Dr. Sayre presented also a dried specimen showing the rotation in lateral spinal curvature, closely resembling caries of the spine. In speaking of the treatment of spinal cases, he said he had obtained excellent results from the application of the plaster-of-Paris dressing to the trunk in Pott's disease, and latterly he had used it in lateral curvature without having cut the tendons of the muscles.

(The application of the plaster-of-Paris dressing to the trunk was practised by Dr. Joseph Bryan, of Lexington, Ky., a former house-surgeon of Bellevue Hospital. An account of the application will be found in the "Notes of Hospital Practice," occurring in the NEW YORK MEDICAL JOURNAL for December, 1874, and a further account in the same department of the JOURNAL for April, 1875. J. J. R.)

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, March 22, 1876.

DR. C. K. BRIDDON, President.

Fibroid Tumor of the Vagina.—Dr. CHARLES HEITZMAN presented a specimen of fibroma which he had examined microscopically, and found to present the characteristics usually found in tumors of that class. He introduced to the Society Dr. FRANK J. METCALFE, who gave the following history of the case: A woman fifty-two years of age came under observation suffering from weakness and pain in the lower part of the abdomen. Considerable difficulty in micturition was complained of, and at times there was a marked increase of the symptoms. Upon making a vaginal examination, nothing abnormal was detected beyond a small tumor on the posterior wall of the vagina.

The wire *écraseur* was applied, and this tumor was removed. It was found to be about three-fourths of an inch in one diameter and half an inch in the other. The tumor appeared to be developed in the submucous layer. Since the operation the patient has been relieved of all pain and difficulty of micturition.

Dr. E. H. M. Sell referred to a somewhat similar growth upon the anterior wall of the vagina, which he had removed. Before the operation the patient suffered severely in passing her water, but since then she has been completely relieved.

Osteo-Chondroma.—Dr. Erskine Mason presented the head of a tibia, showing the presence of a tumor which is classed as osteo-chondroma by Virchow.

The history was as follows: The patient was a man aged sixty-one. Three years ago he received an injury to the tibia. This was followed by severe pain, which lasted for three days. No further trouble was complained of for six months, but at the end of that time periodical attacks of pain were experienced in the neighborhood of the joint, and were supposed to be rheumatic. No lesion could be detected till two months ago, when a tumor made its appearance on the anterior portion of the head of the tibia. Since that time the pain has continued, and at the operation the leg was partly flexed. The operation consisted in amputating at the knee joint, and then sawing off the femur immediately above the condyles. Since the operation the patient has progressed fairly, the only unpleasant complication being sloughing of a portion of the flaps.

Dr. Delafield, at the request of Dr. Mason, examined the specimen, and found it to be the *osteo-chondroma* of Virchow. The growth involved about two-thirds of the head of the tibia, and projected out anteriorly, forming a node. There was no enlargement of the ganglia in the neighborhood of the joint.

Malignant Disease of the Wall of the Chest.—Dr. C. K. Briddon presented a specimen, with the following history: A young man, aged eighteen, entered the Presbyterian Hospital, presenting a tumor situated between the left axilla and nipple. He said that six months ago a lump appeared at a point to the left of the mamma. This tumor steadily increased in size till admission to hospital. It was accompanied from the outset with paroxysms of pain. The tumor at the time of admission was fixed to the thoracic wall, and filled completely the axilla.

On March 9th Dr. Briddon removed it.

An incision was made through the skin and soft parts down to the growth, and an effort to enucleate it attempted. This, however, failed, as the mass was found not only to involve the ribs, but also to pass between them and encroach on the cavity of the chest. As much as possible was removed, and the wound closed. March 10th, pain returned. March 11th, pain worse. March 12th, died.

No autopsy was obtained, but it was obvious that the cavity of the pleura was not opened into. The tumor was of the consistence of cheese, and sufficiently soft to allow of the finger being introduced into it. A microscopical examination showed it to be round-celled sarcoma.

Uterine Polypus.—Dr. Briddon also presented a specimen of uterine polypus. The patient was aged forty-two and a widow. The first suspicion of disease was caused by an increased flow of blood appearing about six months ago, and continuing irregularly up to the time of treatment. On examination a fibroid tumor was found to be attached to the posterior wall of the cervix. It was removed without difficulty.

Dr. Briddon also presented a fatty tumor which he had removed from a patient. It was situated at the root of the neck.

Caries of the Spine.—Dr. Gibney presented a specimen of spinal cord from a patient with caries of the vertebræ. The history of the case showed that the disease resulted from a fall. The cord was not compressed, although the curvature extended from the third dorsal to the second lumbar vertebra. The cause of death was catarrhal pneumonia.

Stated Meeting, April 12, 1876.

Dr. C. K. Briddon, President.

Chondro-Sarcoma of Femur removed.—Dr. Erskine Mason presented a specimen of chondro-sarcoma of the femur, which was of considerable surgical interest, inasmuch as the question to be decided was, whether it were better for the patient to have the thigh amputated or the tumor removed.

The patient was a widow, aged thirty-five. Five years before admission to hospital, she complained of a pain on the outer side of the thigh, but, under hydropathic treatment, combined with sulphur-baths, she improved. Five months before entering hospital, she noticed a growth on the anterior portion of the thigh, accompanied with pain of a lancinating character, which extended down toward the knee. On admission a tumor was found situated on the anterior and lateral portions of the thigh, a short distance below Poupart's ligament. This growth was three and a half inches in one diameter, by five and a quarter inches in the other diameter. It was hard and immovable, but there was seemingly a cystic element in it. There were no enlarged glands in the vicinity. The patient complained of pain when the thigh was rotated, or when she stooped over.

An operation was performed for the removal of the tumor on March 28th. After an incision was made through the skin, a white mass was noticed, and around the base were found several spiculæ of bone. During the operation the tumor was ruptured, and a gelatinous substance of the color and consistence of boiled starch drained away. The posterior wall of the growth was bony, and firmly attached to the femur. It was removed, however, and the subjacent part of the femur scraped. It was then found that there was a slight depression filled with this gelatinous matter, and in the attempt to scoop it out the medullary canal was opened and found to contain a pulsating mass. At this stage of the operation, Dr. Mason said that, if the patient's consent had been obtained, the operation of amputation at the hip-joint would have been performed, but, as it was, the wound was closed by sutures without any further procedure.

Since the operation the patient had done very well; and promised to make a fair recovery.

Dr. Delafield examined the tumor shortly after the operation, and found it to be made up of a fibrous sac with bony spiculæ. It consisted microscopically of the elements of cartilage and connective tissue, and should be classed as chondro-sarcoma. He said that such a form of tumor was perplexing to surgeons, inasmuch as in some cases it recurred, and in other cases it did not recur. In the case presented, he was of opinion that the prognosis was bad, but there was a possibility that it might not return.

Disease of the Acetabulum.—Dr. Erskine Mason also presented the head of a femur, with the following history: The patient was a boy of twelve years. Two years ago he complained of symptoms of hip-joint disease. On admission to hospital there were flexion and adduction of the limb, with sinuses and other signs of the third stage of the disease. No crepitus could be detected in the joint, but, on the exploration of the sinuses with a probe, dead bone could be detected.

It was decided to exsect the joint, and at the operation it was found that the neck of the femur was diseased as far up as the head, but neither the ligamentum teres nor the cartilage of the head was involved. The upper portion of the acetabulum was involved, but there was no perforation. Since the operation the patient was progressing satisfactorily. Dr. Mason said the point of interest in the case was, that, although the acetabulum at its upper part and the neck of the femur at its junction with the head were diseased, the head of the bone was intact.

Puerperal Peritonitis.—Dr. Mary Putnam Jacobi presented the retro-peritoneal lymphatic glands of a patient who died of puerperal fever. The disease appeared four days after confinement, and seemed to have its starting-point in the left ovary and adjacent Fallopian tube. The chain of retro-peritoneal glands extending up to the diaphragm was found to be enlarged.

Stricture of Intestines; Hernia; Peritonitis.—Dr. Satterthwaite presented a specimen showing stricture of the ileum. The history was as follows: Dr. Hadden was called to see a liquor-dealer, aged fifty, and found him to be suffering from a strangulated inguinal hernia, which closely resembled an enlarged gland. An anæsthetic was administered, and the hernia was easily reduced. Shortly after this the patient developed peritonitis, and died in two or three days.

At the autopsy, evidences of extensive peritonitis were found, which apparently had a starting-point at the neck of the sac. There were three strictures of the ileum, situated about a foot from the ileo-cæcal valve. There were no signs of rupture of the intestines, but lodged in the middle stricture was a small piece of oyster-shell.

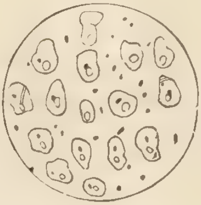
Dr. Satterthwaite thought that the cause of the stricture was due to mechanical influences brought to bear on the gut when resting in the hernial sac. He exhibited, in conjunction with the specimen connected with the above case, a portion of intestine presented some time ago by Dr. Van Giesen. This last specimen exhibited several strictures which were of a tubercular origin. This view was further strengthened by the fact that tubercles were found in the lung.

Morbus Coxæ.—Dr. C. K. Briddon presented the head and neck of a femur which he recently removed from a patient aged eighteen years. The history of the case showed the presence of hip-joint disease, which had passed into the third stage. There were flexion and adduction of the limb, together with shortening. There was no dislocation and no appreciable crepitus. It was decided to remove the head of the bone after the ordinary method. At the operation, it was found, as had been suspected, that the acetabulum had been penetrated. The head of the femur was found extensively eroded. After the operation the patient developed colliquative diarrhœa, and died of exhaustion eleven days after the operation.

Enlarged Prostate.—Dr. Briddon presented the genito-urinary organs of a patient aged sixty years. For a length of time trouble of micturition had been complained of, and latterly the urine contained traces of blood and pus. There was a constant dribbling of urine as if from overflow, but on the introduction of the catheter in the bladder this was not found to exist. Eventually the patient died. The middle lobe of the prostate was found enlarged, and there was also dilatation of the pelvis of the kidney, with pyelitis.

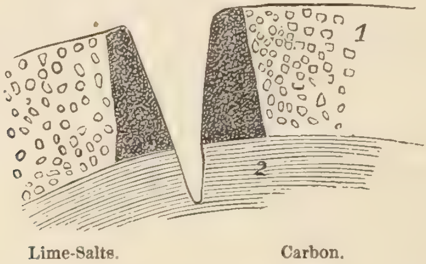
Feeding Cartilage-Corpuscles with Carbon.—Dr. C. Heitzman detailed some exceedingly interesting experiments made in regard to the inflammation of cartilage, and exhibited a microscopic slide, showing the presence of carbon in a section of cartilage, as shown in Fig. 1. The carbon was the result of a pathological process which is detailed below. When a hot iron was carried through the cartilage and into the bone

Fig. 1.



of the knee-joint of a dog, an inflammation was set up which showed after eight days a deposit of lime-salts around the wound, and two or three lines farther removed a deposit of carbon in the substance of the cartilage, as seen in Fig. 2.

Fig. 2.



The explanation of this conveyance of the minute particles of carbon was unsatisfactory till Dr. Heitzman demonstrated that the basis substance of cartilage, instead of being structureless, as was supposed, was made up of cartilage-corpuscles, and that by the contraction of them and their filaments minute particles of foreign matter could be taken up and conveyed some distance. This experiment was verified in Stricker's laboratory in regard to the similar action on particles of cinnabar.

The demonstration of the corpuscles was effected by staining the cartilage with nitrate of silver and chloride of gold. When a solution of nitrate of silver was applied, the corpuscles were unaffected, and appeared as white spaces with canaliculi in the stained basis substance. This is shown in Fig. 3.

When a solution of chloride of gold was afterward used, the corpuscles and their filamentous communications were tinged violet, as shown in Fig. 4.

FIG. 3.

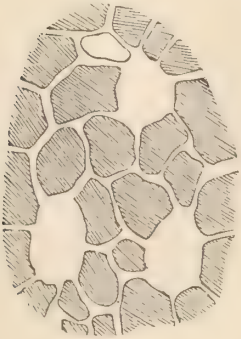
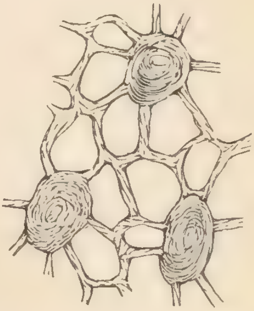


FIG. 4.



Bibliographical and Literary Notes.

ART. I.—*A Treatise on the Diseases of the Nervous System* By WILLIAM A. HAMMOND, M. D., Professor of Diseases of the Mind and Nervous System in the Medical Department of the University of the City of New York, President of the New York Neurological Society, etc., etc. With One Hundred and Nine Illustrations. Sixth edition, rewritten, enlarged, and improved. New York: D. Appleton & Co., 1876.

IN the short space of four years five large editions of Dr. Hammond's treatise have been exhausted, and the book was already out of print when he began its revision for the press. The sixth edition now issued is no mere reproduction of those that have preceded it. On comparing it with its predecessors, it is quite evident that its author has spared no pains to make it a complete treatise on the diseases of the nervous system. The entire work has been recast, the empirical classification previously adopted has been abandoned for a more philosophical arrangement based on pathology and morbid anatomy, some of the sections have been remodeled, and many of the chapters amplified by new matter illustrative of symptomatology, pathology, and treatment. Moreover, diseases omitted in former editions have been fully considered in this; e. g., chronic verticalar meningitis, chronic basilar meningitis, facial atrophy, and various inflammatory affections of the spinal cord, with the lesions of motion, sensation, and nutrition, peculiar to each.

The treatise, as it now stands, consists of an introduction and five sections. The introduction describes and illustrates the instruments and apparatus employed in the diagnosis and treatment of diseases of the nervous system: the ophthalmoscope, the cephalohæmometer, the esthesiometer, the differential calorimeter, the dynamometer, the dynamograph, together with electrical and cauterizing apparatus. Then follow the five sections, the first devoted to diseases of the brain. Chapter V. of this section, under the heading "Partial Cerebral Anæmia from Obliteration of Cerebral Blood-Vessels," gives in the short space of nine compact pages all that is accessible relative to thrombosis of the cerebral veins and sinuses, and thrombosis and embolism of the cerebral arteries and capillaries. Chapter IX., on "Chronic Cerebral Meningitis," is subdivided into chronic verticalar meningitis and chronic basilar meningitis, and the discriminating symptoms between the two are clearly described, and well impressed upon the reader.

It is in Section II., however, devoted to diseases of the spinal cord, that the author has made the most extensive, and perhaps also the most valuable additions to his treatise. Availing himself of recent additions to our knowledge of the inflammations of this organ, contributed by the researches of Charcot and Vulpian, he has introduced a new chapter, which, while it includes the diseases described in previous editions, treats the whole subject from a new and more comprehensive standpoint. This chapter is so full of matter that any attempt to give it, even in bare outline, would exceed the limits of this notice. Suffice it to say that it is ample, lucid, and exact, and that it imparts knowledge which is here, we believe, for the first time made available to the reader of English.

The chief additions to Section III. are a chapter on anapeiratic paralysis and one on exophthalmic goitre. The latter

Dr. Hammond regards as an "affection of the brain and medulla oblongata," while at the same time acknowledging that in this view he is at variance with many eminent authorities, who maintain that it is a disease of the sympathetic nerve. He thinks—and as a piece of special pleading the point is well taken—that "the absence of pupillary disturbance is one of the strongest circumstances against the hypothesis of sympathetic disorder." We are not arguing one way or the other, but it seems to us that this is also evidence of some value against the hypothesis that it is exclusively a disease of the brain and medulla oblongata. However, until morbid anatomy settles the point, one opinion is as valuable as another, and, anyway, Dr. Hammond has rightly included this affection among nervous diseases.

Section IV. is so enlarged by the addition of fresh matter as to be almost new. In addition to the chapters contained in previous editions, it has several on inflammation of nerves and their atrophy.

Section V., the last of the treatise, is entirely new, and is devoted to toxic diseases of the nervous system. It treats of the morbid effects on the nervous economy caused by the ingestion of foreign substances; and under this general designation gives chapters on plumbism, alcoholism, bromism, hydrargism, and arsenicism. Each is treated with fullness and precision; but, if toxicology in this or any other of its branches is to form part of a treatise on diseases of the nervous system, there is hardly any reasonable limit to the space it may rightfully claim. If alcoholism and bromism, why not also *opiumism* and *tobaccism?* The whole section could be omitted without detriment to the value of the book, and its place supplied by one on—say, the hygienic management of those afflicted with nervous diseases.

The volume has an index, and is furnished with ingenious diagrams and numerous plates. Many of the latter are good, but some—those illustrating the physiognomy of different forms of insanity, and the hysteroid affections in particular—cannot be commended as works of art, however true to nature. This, however, is but a trifling flaw in a volume where most else is of so high an order of merit. We can unreservedly commend this edition of Dr. Hammond's treatise to the medical profession as the best guide in the English language to the knowledge and treatment of the diseases of the nervous system. And we must felicitate Dr. Hammond equally on his mastery of an abstruse subject, and on the skill with which he communicates his knowledge to others. In a department of medicine so comparatively new, where the subject-matter is so complex, where the facts are so numerous, and so scattered up and down through the publications of many countries, to have succeeded so well in elucidating the former, and in collating and digesting the latter, is matter for honest pride, in which the entire medical profession of America will doubtless share with Dr. Hammond.

Art. II.—*The Student's Guide to the Practice of Midwifery.* By D. Lloyd Roberts, M. D., M. R. C. P., London.

The design of this little work is, as its title imports, that it shall be merely a guide for the use of the student or practitioner.

In reviewing the book, one finds very little to criticise unfavorably, and much to commend in unqualified terms. It appears to be fully up to the advanced ideas on the subject; and, while it goes very little into detail, everything of practical importance is given in lucid outline.

The author has taken it for granted that the student has sufficient knowledge of the anatomy of the subject, so has dwelt but briefly upon it. So, also, to the points of minor interest he has devoted but little space, in order that he might consider more fully the subjects of greatest practical interest.

The pelvis is first treated of, and each of its component parts is separately described. Afterward it is considered as a whole, and the chief peculiarities of form, direction, and size are pointed out.

On page 12 there is a statement which should be brought to the attention of the student, as it is likely to mislead. In describing the true and false pelvis, the true pelvis is said to be "that portion above the ilio-pectineal line, and the false that portion below it." The transposition of the words is evidently an oversight.

He then passes to the consideration of the external and internal organs of generation, ovulation, and menstruation, the development of the ovum, and the gravid uterus, giving merely the facts that the latest scientific research has established.

Greater latitude is given to the description and explanation of the mechanism of labor, and the obstetric operations, than to any of the other subjects, the author rightly deeming them of the most importance in fulfilling the design of the book; in fact, so thoroughly is the work done, that we see nothing of practical interest that is omitted.

The chapter on abortion is not so full as we could wish. We hoped we should find something new—new as far as works on obstetrics are concerned—on the methods of tamponing the vagina. It is strange that foreign authors have not learned that Sims's method has advantages over the old ones, which make it the easiest, and, at the same time, the surest way of controlling uterine hæmorrhage.

In the chapter on puerperal fever the various theories are briefly discussed, the author himself inclining to a belief in the septicæmic character of the disease. A deserved compliment is paid to Dr. Fordyce Barker, whom he styles "one of the ablest advocates" of the specific nature of the disease.

The book is in good type, and abundantly furnished with carefully-executed woodcuts.

Art. III.—*Medical and Surgical Memoirs; containing Investigations on the Geographical Distributions, Causes, Nature, Relations, and Treatment of Various Diseases.* 1855–'76. By Joseph Jones, M. D., etc., etc. Vol. I. 8vo, pp. xx.–820. New Orleans: Printed for the author, 1876.

Trousseau has said that "it is more than half of medicine to understand the natural course of disease." Doubtless the author was actuated by the desire to advance that knowledge when twenty years ago he conceived the idea of preparing these "Memoirs." His undertaking we should think was an almost endless one, as two more large volumes are promised to complete the series.

The present volume includes what we judge the author intends for exhaustive articles, on the "Introduction to the Study of Diseases of the Nervous System;" "Investigations on Traumatic Tetanus" (including some other nervous diseases); "Cerebro-Spinal Meningitis;" "Diseases of the Lymphatic and Circulatory Systems, and of the Liver and Kidneys, illustrating the Relations of Dropsy to Various Diseases;" "Investigations on the Prevalence and Fatality of Pneumonia in the Confederate Army," etc.; and "Observations on Diseases of the Osseous System."

The first-named article occupies one hundred and thirty-seven pages of very fine print, and embraces history, microscopical anatomy, and physiology, together with discussions of some abstract questions. The references are very copious. The second article, on tetanus, covers two hundred and sixty-seven pages. That on cerebro-spinal meningitis occupies one hundred and forty-three pages. In this article Dr. Jones joins issue with those who consider the disease in question a zymotic disease or a fever, but classes it with the phlegmoniæ, induced in the same way as acute pleurisy, peritonitis, pneumonia, rheumatism, etc.; and says (page 476) "Without doubt one of the most potent causes of the various forms of idiopathic inflammations is exposure to cold, and the consequent arrest or perversion of the function of the skin."

Juergensen has a different view so far as pneumonia is concerned, and the vast majority of pathologists entertain other views in regard to the essential nature of cerebro-spinal meningitis. The author seeks to prove his position by numerous experiments illustrating the action of certain gases and other poisons in the blood; but while these experiments, especially those respecting the action of the poisons of the copperhead and rattlesnake, are interesting enough in themselves, they do little to support his theory, except that it is shown that carbolic acid in excess will induce changes in the blood corpuscles similar to the condition found in some cases of cerebro-spinal meningitis.

The work must have involved an immense amount of labor on the part of the author, both in his original investigations and in his research, which is quite extensive, especially in regard to the history of several diseases. Whether its practical merits will be commensurate with this labor or not, it may be difficult to determine; we are rather of the impression, however, that for the busy practitioner the more systematic treatises already extant will be more convenient for reference, although the thorough student will doubtless find much to which he will gladly refer for its statistical value. Judgment concerning its merits may be rendered more satisfactorily when the series is completed.

ART. IV.—*Atlas of Skin-Diseases, consisting of a Series of Colored Illustrations, together with Descriptive Text, and Notes upon Treatment.* By TILBURY FOX, M. D., F. R. C. P., etc. Philadelphia: Lindsay & Blakiston. 1876.

THE study of skin-diseases is greatly facilitated by the use of plates, especially of colored plates. The ability to describe accurately, to use the one word which will best convey the idea, is not possessed by every one, and language itself, even when most skillfully used, is not always adequate to the task. This is especially true of diseases of the skin, and, as in most cases the diagnosis can be made by sight alone, it is evident that a perfect pictorial representation of the lesion would be the surest guide to the student. Unfortunately, the mechanical difficulties in the way of the realization of this ideal are practically insuperable. Even a carefully-painted water-color would fail to do full justice to the subject; and the ordinary chromo-lithograph, which alone is justified by the demand, fulfills but a small part of the indications. Insufficient as it is, it is yet far superior to the bare text. It gives at a glance what may be termed the physiognomy of the affection, and to that extent is a great help to the student, and others who are not thoroughly familiar with the subject. To the expert, of course, it has no value; his clinical experience, his practical acquaintance with the appearances which are sought to be reproduced, lead him to remark only the points in which the representation falls short of the reality.

The present work is to be completed in eighteen monthly parts, of which three have already appeared. These include erythema, urticaria, strophulus, roseola, and lichen. In execution the plates are of course not equal to Hebra's large and expensive ones, which are intended primarily for specialists and teachers, but this inferiority is fully made up for by the descriptive text and the outlines of treatment. The name and writings of the author are too well known to render any criticism of that part of the work necessary. We shall give a detailed description of the plates after a few more shall have appeared.

ART. V.—*The Student's Guide to Human Osteology.* By W. W. WAGSTAFFE, B. A., F. R. C. S., Assistant Surgeon to and Lecturer on Anatomy at St. Thomas's Hospital. Philadelphia: Lindsay & Blakiston, 1875.

THE study of the bones is unquestionably regarded by the majority of medical students as a bugbear, and is disposed of by them with most superficial attention. This, we believe, is in a great measure due to the dry and uninteresting descriptions and incomprehensible plates which characterize most of our text-books of anatomy; and we are, therefore, glad to note the appearance of a manual which purposes "to describe the bones of the human skeleton with accuracy, but without wordiness," and "to interest the student in the mechanical wonders of his framework." In a small volume of about three hundred pages the author has accomplished this purpose creditably. His descriptions are short but simple; and the paragraphs on the mechanism of each bone are clear and exceedingly interesting, and well illustrated with woodcuts. A chapter on "Bony Landmarks" at the end of the volume is invaluable, and should be of great assistance to the student. The drawings, which are on stone, and in which Holden's method of indicating muscular attachments by colored lines is followed, do not show the same uniform excellence as the text. Most of them are clear, but some, those of the os innominatum and os femoris, for instance, are on too small a scale, and are so crowded with names and lines as to be of doubtful assistance. It is to be wished, too, that points of surgical interest had been given some attention. They would have supplemented most fittingly the admirable remarks on the mechanism.

There are more elaborate treatises, to which one must be referred for thorough study of osteology, but this manual has the merit of imparting necessary information in an agreeable form, and it should stimulate students to make themselves thoroughly acquainted with a subject which is of the greatest importance to practical surgery.

ART. VI.—*A Treatise on the Diseases of Infancy and Childhood.* By J. LEWIS SMITH, M. D., Physician to the New York Infants' Hospital; Physician to the Catholic Foundling Asylum; Physician to the Protestant Infant Asylum; Consulting Physician to the Class of Children's Diseases, Out-door Department of Bellevue Hospital Clinical Lecturer on Diseases of Children in Bellevue Hospital Medical College. Third edition, enlarged and thoroughly revised. With Illustrations. Philadelphia: Henry C. Lea, 1876.

THE appearance of a third edition of Dr. Smith's excellent treatise is proof in itself that, notwithstanding several formidable rivals, this work holds a high place in the esteem of the profession. There is no doubt, indeed, that it is one of the best books on diseases of children in the English language. This praise may seem too general, but the volume is already so well known that we need only call attention to a few of the many improvements that add to the value of the latest edition. We find that several chapters have been rewritten, and others considerably enlarged and amended, in order to bring the volume up to the latest date. The chapter on diphtheria has undergone important changes, in the light of the author's more extensive experience, and the greater prevalence of that disease. A chapter has been devoted to

Rötheln, and another to Cerebro-spinal Fever, neither of which diseases was treated of in previous editions.

It is less than four years since the author gave us his second edition, but even that short time is long enough, to one having special facilities for clinical study, to add largely to experience. This ripe experience is abundantly evident in the enlarged and enriched volume before us, which we heartily commend to the professional reader.

Art. VII.—*On Stethometry. Being an Account of a New and more Exact Method of measuring and examining the Chest, with some of its Results on Physiology and Practical Medicine. Also an Appendix on the Chemical and Microscopical Examination of Respired Air.* By Arthur Ransom, M. D., M. A. (Cantab.), Examiner in Anatomy, and Physiology and Pharmacology, in the University of Cambridge, etc. With Illustrations. London: Macmillan & Co., 1876.

The object of this work is well expressed by its title. It is an attempt to carry the art of measuring the chest to a higher degree of exactitude than has hitherto been done, with a view of rendering diagnosis more precise in the every-day study of disease. The author has evidently devoted much thought and labor to the subject, and his results are well worthy of study. He has rendered the art of chest-mapping not only more exact, but also more simple and less liable to error. By the employment of what is called a stethometer, the various movements of the thorax are gauged and recorded with wonderful accuracy, and many useful and curious results are made evident. The stethographic tracings in health and disease also promise to yield valuable practical results, and to aid materially in prognosis.

The work closes with an Appendix giving some interesting information on the nature and quantity of the organic matter contained in respired air.

Art. VIII.—*The Diseases of Tropical Climates and their Treatment. With Hints for the Preservation of Health in the Tropics.* By J. A. B. Horton, M. D., Edin., F. R. G. S., Surgeon of the Army Medical Department, etc., etc. London: J. & A. Churchill, 1874.

This is a full but not an exhaustive treatise, based on personal observation and experience in the diseases peculiar to the tropics. The author has divided his work into three principal parts, the first of which treats *primarily* of "those pyrexial diseases which have pathologically a common origin, depending on the effects of the poisonous effluvia of terrestrial emanations;" *secondarily*, of those due to a specific poison and propagated by a specific virus. The second part of the work deals with the diseases of the intestinal canal and abdominal region. The third part treats of diseases produced by morbific matter generated within the system, and of local affections of particular parts or organs of the body. The Appendix is devoted to the subject of tropical hygiene, and contains a variety of useful rules as to dress, diet and drink, exercise, sleep, bathing, etc.

As the work is one of limited practical value to American practitioners, it does not demand criticism; but to all interested in the diseases of the tropics it will prove a useful guide and hand-book.

Art. IX.—*Lectures on Obstetric Operations, including the Treatment of Hæmorrhage, and forming a Guide to the Management of Difficult Labor.* By Robert Barnes, M. D., Lond., F. R. C. P., Obstetric Physician, and Lecturer on Obstetrics and the Diseases of Women and Children, to St. George's Hospital, etc., etc. Third edition, revised and enlarged. New York: D. Appleton & Co., 1876.

The author has endeavored by careful revision, and the addition of new illustrations, to enhance the value of a work that has already obtained great popularity, and one that may be said to stand alone in the department of obstetrics of which it treats.

Among the additions to the new volume we observe a short lecture on "Dystocia and Eutocia," a more ample discussion of "Inversion and Rupture," and a thorough revision of the lectures on "Hæmorrhage;" but no material change in the doctrines set forth in previous editions.

It is a high and well-merited compliment to the author that his work has been translated into the French, Norwegian, and Russian languages.

Art. X.—*Medical Thermometry and Human Temperature.* By E. Seguin, M. D. New York: William Wood & Co., 1876.

This portly volume is devoted to the important subject of thermometry, in all its aspects and bearings. Some space is given to the history of the medical use of the thermometer, and much interesting information regarding human temperature, physiological and pathological, has been gathered from various sources. The most practical and valuable part of the work, however, is that which treats of the variations of temperature in individual diseases, and the significance that should be attached to such variations.

The work contains much that is of no clinical value, save indirectly as a scientific record of somewhat uninteresting facts and details. The author urges the importance of instructing mothers in the use of the thermometer, and of rendering it available to many non-medical persons, whose observations he believes might render valuable aid to the practitioner.

Art. XI.—*Legal Chemistry. A Guide to the Detection of Poisons, Examination of Stains, etc., etc., as applied to Chemical Jurisprudence. Translated, with Additions, from the French of A. Naquet, Professor to the Faculty of Medicine of Paris.* By J. P. Battershall, Nat. Sc. D., with a Preface by C. F. Chandler, Ph. D., M. D., LL. D. New York: D. Van Nostrand, 1876.

This little translation presents in a very compact form much that should be generally known regarding the detection of poisons and their effects. There are many simple points connected with the phenomena of poisoning which should be familiar to every physician. It is this useful information which this treatise is designed to impart. The expert may not find much in it to demand his study, but he will be interested in the very copious list of works and papers on toxicology given in the Appendix.

Art. XII.—*The Student's Guide to Dental Anatomy and Surgery.* By Henry Sewill, Member of the Royal College of Surgeons and Licentiate in Dental Surgery, etc. London: J. & A. Churchill, 1876.

This is intended as a manual for dental students, and it appears to be a very good one; but the author does not intend it to take the place of the elementary text-books, a familiarity with which is taken for granted. Small as the volume is, it attempts to cover the whole ground, from the anatomy and histology of the teeth to their extraction and filling. The author evidently understands his subject, but he appears at a disadvantage working within such narrow limits as a 12mo book of less than two hundred pages.

Art. XIII.—*A Manual of the Diseases of the Eye.* By C. Macnamara, F. C. U., Surgeon to the Westminster Hospital. Third edition, 16mo, pp. 614. Philadelphia: Lindsay & Blakiston, 1876.

The second edition of this work was reviewed in the January number of this Journal, 1873. It would therefore be superfluous to spend much space upon this edition. Since the author's return to Europe from Calcutta he has revised the book, and this edition fully sustains the character of those which have gone before.

Art. XIV.—*The Physician's Combined Call-Book and Tablet.* By Ralph Walsh, M. D. Washington, D. C.

This pocket-book for physicians is different from any other we have seen, and has some advantages of its own. It is very simple in its arrangement, and contains no printed dates; hence it can be begun any month or year, and filled quickly or slowly as the case may be, without waste of a single line. The book is of more convenient proportions than those in common use, being thinner, and less bulky in the pocket. It has also a silica tablet, and a list of medicines and their doses.

Books and Pamphlets Received.—Medical and Surgical Memoirs, containing Investigations on the Geographical Distribution, Causes, Nature, Relations, and Treatment of Various Diseases, 1855–1876. By Joseph Jones, M. D., Professor of Chemistry and Clinical Medicine, Medical Department University of Louisiana; Visiting Physician of Charity Hospital; Honorary Member of the Medical Society of Virginia; formerly Surgeon in the Provisional Army of the Confederate States. Vol. I. Introduction to the Study of Diseases of the Nervous System; Investigations on Traumatic Tetanus, Epilepsy, Paralysis, and Cerebro-Spinal Meningitis; Clinical Observations on Diseases of the Lymphatic and Circulatory Systems, and of the Liver and Kidneys; Investigations and Researches on Pneumonia; Observations on Diseases of the Osseous System. Illustrated by Eight Hundred Cases of Disease, Four Hundred Physiological Experiments, Ninety-five Analyses of the Blood and Urine, and Sixty Tables, illustrating the Symptoms and Mortality of Diseases under Different Modes of Treatment, and in Different Climates.

A Manual of General Pathology, for the Use of Students and Practitioners of Medicine. By Ernst Wagner, M. D., Professor of General Pathology and Pathological Anatomy in the University of Leipsic; Director of the Medical Polyclinic of Leipsic. Translated from the sixth German edition, by John van Duyn, A. M., M. D., and E. C. Seguin, M. D. New York: William Wood & Co., 1876. 8vo, pp. 728.

Annual Announcement of the Medical College of Evansville, Ind., Session of 1875–'76.

Transactions of the State Medical Society of Arkansas, 1875–'76.

Transactions of the Thirtieth Annual Meeting of the Ohio State Medical Society, held at Put-in-Bay, June 15–17, 1875.

A Manual of the Diseases of the Eye. By C. Macnamara, F. C. U., Surgeon to the Westminster Hospital. Third edition. Philadelphia: Lindsay & Blakiston, 1876.

Landmarks, Medical and Surgical. By Luther Holden, F. R. C. S., Senior Surgeon to St. Bartholomew's and the Foundling Hospitals. London: J. & A. Churchill, 1876.

Medical Responsibility in the Choice of Anæsthetics, with a Table of the Anæsthetic employed, its Mode of Administration, and Results, in nearly Fifty Large Hospitals in the United Kingdom. By H. Macnaughton Jones, M. D., Fellow of the Royal College of Surgeons, Ireland and Edinburgh, etc. London: H. K. Lewis, 1876.

Sixth Annual Report of the New York Ophthalmic and Aural Institute, 46 East Twelfth Street, for the Year beginning January 1, 1875, and ending December 31, 1875.

A Lecture delivered before the Pupils of the School for Nurses, Charity Hospital, February 13, 1876, on Posture. By W. M. Chamberlain, M. D., Visiting Surgeon to Charity Hospital.

Nature's Power to heal. By William Canniff, M. D., M. R. C. S. E., Toronto, Surgeon to the Toronto General Hospital.

Extract from the Ninth Annual Report of the State Board of Charities of the State of New York, relating to Hospitals for the Sick and Insane. By M. B. Anderson, Commissioner Seventh Judicial District, and J. C. Devereux, Commissioner Fifth Judicial District. To which is appended a Report relating to the Management of the Insane in Great Britain. By H. B. Wilbur, M. D. Transmitted to the Legislature January 14, 1876.

Report of the State of the New York Hospital and Bloomingdale Asylum, for the Year 1875.

Third Annual Report of the Training School for Nurses attached to Bellevue Hospital. Presented to the Visiting Committee for Bellevue and other Hospitals, February 1, 1876.

The Rise, Minutes, and Proceedings of the New Jersey Medical Society, established July 23, 1766. Pp. 110.

New York Society for the Relief of Widows and Orphans of Medical Men, incorporated 1843. Constitution, Laws, History, List of Officers and Members, etc.

A Case of Vascular Protrusion of Both Eyeballs, most probably from Arterio-Venous Communication in the Cavernous Sinus; Total Blindness; Ligation of the Left Common Carotid; Recovery. By Dr. Emil Gruening, of New York. Reprinted from *Archives of Ophthalmology and Otology*, vol. v., No. 1, 1876.

On So-called "Ulcerations" of the Os Uteri. By Clifton E. Wing, M. D. Reprinted from the *Boston Medical and Surgical Journal.*

Proceedings of the Medical Society of the County of Kings, Brooklyn, N. Y. Conducted by the Council of the Society. Published monthly. February and March.

Twelfth Annual Report of the New York Society for the Relief of the Ruptured and Crippled, May, 1875.

Preliminary Report of the Mortality Experience of the Mutual Life Insurance Company of New York, from 1843 to 1874. By G. S. Winston, M. D., and E. J. Marsh, M. D., of the Medical Department. New York: Printed by Order of the Board of Trustees, 1875.

Aids to Anatomy. By George Brown, M. R. C. S., S. S. A., Late Demonstrator of Anatomy at Westminster Hospital Medical School. London: Baillière, Tindall & Cox, 1876.

A Series of American Clinical Lectures. Edited by E. C. Seguin, M. D. Vol. ii., No. 2. On Certain Forms of Morbid Nervous Sensibility. By J. S. Jewell, M. D. New York: G. P. Putnam's Sons.

Reports of the Medical Officer of the Privy Council and Local Government Board. New Series, IV., V., VI., 1875.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. E. H. BRADFORD, EDWARD FRANKEL, AND GEORGE R. CUTTER.

SURGERY.

Accidents from Thoracentesis.—The subject of the accidents which sometimes occur from thoracentesis has attracted some attention in the medical societies at Paris. This has suggested an article, to be found in the *Gazette Hebdom.*, February 11, 1876. Cases of sudden death after thoracentesis are rare. Three cases have been recently observed which may be attributed to emboli caused by the sudden removal of pressure on the lungs; but, as clots are formed and emboli occur in cases of untreated pleurisy, it is questionable whether the deaths can be fairly attributed to the operation alone; and also, if an earlier tapping, before the clots had formed, would not have saved life. Certain facts, mentioned by MM. Behier, Lionville, and Terillon, prove that death has occurred from the pulmonary congestion and œdema consequent on the removal of liquid in the thoracic cavity. In the three cases of death reported, however, the pleurisy was complicated by other pulmonary lesion, which, without doubt, acted as a predisposing cause. M. Tenneson has observed a dangerous asphyxia occurring during the operation of tapping, after removing but a small quantity of liquid (600 grammes), due in his opinion to sudden congestion of the lung. In this case pleurisy had existed four months. It is probable, therefore, that the expansibility of the lung had been impaired by pseudo-membrane, and that the aspirator, in thoroughly evacuating the fluid, had induced congestion to fill the cavity which the lung was unable to fill by simple expansion. An early operation, and slow aspiration, to cease on the slightest distress of the patient, insure safety. E. H. B.

Variations in Location of Metastatic Abscesses in Purulent Infection.—M. Deprès, in a paper recently read before the Académie de Médecine, observes that these abscesses are of common occurrence in hospitals, he having had thirty-four cases in three years, three of which had recovered; and, on thirty, autopsies had been made. Metastatic abscesses do not regularly occupy the same organs; just as, in constitutional syphilis, the lesions in purulent infection occupy the seats of predilection, and vary according to the constitution and habits of the patients. The author establishes the following law: 1. The usual seat of metastasis in purulent infection is in the lung, in previously healthy subjects. In all cases where the inflammation or the wound which causes the infection affects vessels of the systemic circulation, the abscess occupies the lung. 2. Pyæmia following lesions which concern the hepatic venous system usually engenders metastatic abscesses of the liver. 3. In patients who have had antecedent diseases, or whose course of life has left durable alterations in any organ, metastatic abscesses will appear in that organ at the same time with their appearance in the lung. Thus we find abscesses in the liver in those addicted to alcoholic stimulants, and in the spleen in those who have had intermittent fever. Subsequent researches will undoubtedly demonstrate that metastatic abscesses in the joints occur in rheumatic subjects.—*Gazette Médicale*, 12, 1875. E. F.

Alum in Urethritis.—Dr. Am. De Vos (*Annales de la Société de Liége*) thinks that a supersaturated solution of calcined alum, properly used, is the most efficacious treatment for urethritis. A supersaturated watery solution of calcined alum should be made, and so much excess of the very fine powder added that it remains in suspension when the bottle is agitated. The solution is left quiet a moment before using, so that any larger crystals may subside. After the patient has micturated, this solution is injected and retained for several minutes, and then allowed to escape slowly. The walls of the urethra are thus coated with a fine deposit of alum, which is better accomplished in this way than by the use of suppositories or medicated bougies. If carefully repeated, not more than two or three times in the course of twenty-four hours, a rapid cure is almost uniformly obtained. It is sufficient to avoid all excess, without having to follow those rigorous dietetic restrictions which are as annoying as the disease to the patient. Besides, the use of copaiba and cubebs may be dispensed with. This treatment is most applicable when the very acute symptoms are subsiding.—*Presse Méd. Belge*, December, 1875.

G. R. C.

General Atrophy of the Right Inferior Extremity after Injury.—MM. Desnos and Barié report the following case: X., aged fifty-six years, in 1870 had the wheel of a wagon pass obliquely over his right foot. The contusion was slight, and, though lame, the patient resumed his occupation after a few days. Five months later the patient, still somewhat lame, observed that the entire lower extremity became emaciated, and that the lameness increased. At this time, measurement established a difference of four centimetres. The atrophy evidently affected the entire limb, even the buttock. He was more easily fatigued when using it, and there were shooting pains through it, and painful sensations of cold, and tingling. The skin around the circumference of the calf was a little smoother than elsewhere on the limb. In short, the case was one of injury of the foot, apparently slight, which called forth a slow and continued pathological process, progressing to a general atrophy of the entire limb, its muscles, bones, articulations, skin, etc. The authors explain the process by the irritation of the sciatic nerve having been transmitted to its point of origin, passing to the gray substance and affecting this as well as the trophic centre.—*Progrès Méd.; Lyon Méd.* E. F.

Penetrating Wound of the Chest; Pyo-pneumothorax; Treatment with Carbolic Acid and Turpentine.—A young man, twenty-three years of age, had received a penetrating wound, by a knife, in the fifth intercostal space of the right side of the chest, which gave rise to an effusion of blood into the pleural cavity. Prolonged suppuration followed, and pyo-pneumothorax was developed. When the patient presented himself for treatment

to Dr. Cianciosi, he was extremely feeble and very much emaciated: respiration was difficult and frequent; harassing cough and purulent expectoration; no appetite; intense thirst; elevated temperature, diarrhœa, and chills at night, followed by sweats. The diarrhœa, cough, etc., were combated with the usual remedies, and in addition carbolic acid was given, in a decoction of cinchona (15–30 grs.—200). The local treatment consisted in dilating the wound with prepared sponge, and making injections of carbolic acid in cinchona-decoction. A notable amelioration soon manifested itself, and all alarming symptoms disappeared, leaving only a loose cough, with some muco-purulent expectoration; this was treated with turpentine by inhalation and internally, after which the patient gained rapidly, and had recovered after a fortnight.—*Il Raccoglitore; Gaz. Méd.*, 19, 1875.
E. F.

THEORY AND PRACTICE.

Hysteria in the Male.—M. Bonnemaison, of Toulouse, reports the case of a man, aged seventy-two years, who has been affected for twelve years by a peculiar neurosis, which consists in the occurrence of crises occurring during the night, as nightmare, while during the day there is pain at the pit of the stomach. The epigastric aura then ascends the length of the sternum, and the patient begins to cry, bark, or mew, for several minutes. The convulsion attacks the muscles of the larynx, arms, and hands, and the patient repeatedly automatically exclaims, "*Rantanplan!*" while at the same time a rhythmical movement is made with the arms as if he were beating a drum. The case is one of hysteria of hereditary origin, and choreic in form, which corresponds exactly to the rhythmic chorea of the epidemics of Toulouse and Louviers. The author combats the theory that the seat of hysteria is located in the genital apparatus. The facility with which an attack can sometimes be called forth or checked by pressure in the iliac fossa is no more evidence of the uterine theory of hysteria than the production of a convulsion by pressure on the epigastrium proves the gastric theory of Cullen. M. Bonnemaison admits that, if hysteria is rare in man, at least in its convulsive form, it is relatively frequent in its hypochondriacal form.—*Rev. des Sciences Méd.; Lyon Méd.* E. F.

Enuresis.—Hypodermic injections of strychnine have recently been used by Kelp (*D. Arch. für klin. Med.*) in the treatment of enuresis, with good results. He reports the case of a girl, sixteen years of age, in which the affection had continued from infancy. He commenced by injecting one-sixteenth of a grain, afterward one-eighth to one-sixth of a grain, into the sacral region. The improvement was distinctly perceptible, even after the first injection. A complete cure was obtained in less than four months. The injections were repeated as often as the trouble reappeared. Other successful cases are reported.—*Vierteljahrschrift für die prakt. Heilkunde*, Bd. 1, 1876. G. R. C.

DISEASES OF WOMEN.

Atropine Injections in Spasmodic Pains.—Eulenberg, in his article on the hypodermic injection of remedies, says that Breslau was the first to employ atropine in this way for spasmodic pains. After the injection of 0.0015 in the hypogastric region, he noticed in half his cases a very considerable improvement in the spasmodic condition, and the mouth of the womb was either completely retracted or had become so relaxed that it could be easily dilated. The character of the pains was simultaneously changed: regular pauses commenced, the spasmodic pains and the febrile irritation diminished, the uterus assumed the usual form, and its tenderness disappeared; the presenting portion of the membranes came farther down, and the parturition commenced to advance, so that it was often completed in four to five hours, or sooner, after the injection, and this in cases where the spasmodic pains had lasted twenty-four to forty-eight hours, and probably would have continued indefinitely. If the effect is not manifested in three to four hours, the injection may be repeated; a third injection is never necessary.

Spiegelberg mentions a case where such a dose caused atony of the uterus, though Fränkel never, among his very numerous cases, saw one where a dose not exceeding 0.001 was used, if the proper after-treatment was pursued. It is his opinion that Spiegelberg used very large doses, and produced, not an atony, but a paralysis of the uterine muscles, and he refers to the experiments of Von Bezold and Blöbaum, which show that the intestinal canal, bladder, uterus, and ureters, lose their irritability, partially with small doses, and completely with large ones.

Fränkel endeavored to produce the same effects as with large doses of atropine by strengthening the smaller doses by the addition of chlorate of morphine. The combined effect of these remedies proved to be very considerable; quite firm strictures yielded in five minutes after the injection. To relieve the effect of the abdominal pressure he used inhalations of a very small quantity of chloroform, three to five minutes after the injection. These were constantly followed by a very pleasant narcosis. Fränkel and Grützner's experiments on animals (pregnant dogs) also showed that, after the injection of atropine and morphine combined, a very much smaller dose of chloroform was necessary than without the injection, or than when morphine alone was previously injected.

From these experiments Fränkel concludes: 1. In spasmodic constrictions of the uterus, whether total or partial, the combined application of the chlorate of morphine and the sulphate of atropine, with subsequent chloroform narcosis, is the safest and most innocuous means of removing the constrictions and rendering possible later operations, both at the period of expulsion and after birth. 2. With a suitable dose, particularly of the atropine (not exceeding 0.001), and an intelligent treatment during the *post-partum* period, there is no special danger of atony of the uterus and its dependent hæmorrhage. 3. The previous injection of atropine and morphine facilitates the occurrence of the chloroform narcosis, and renders it less dangerous.—*Ugeskrift for Laeger*, 3dje., Boekke xx., No. 29.

G. R. C.

REPORT ON LARYNGOLOGY.

No. I.

By GEORGE M. LEFFERTS, M. D.,

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5. Porter.—On Aphonia, its Causes and Treatment. *St. Louis Medical and Surgical Journal*, January and February, 1876.
6. Cohen.—Follicular Ulceration of the Larynx, concurrent with Phthisis; Case. *Philadelphia Medical Times*, January 8.
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8. Edis.—Cyst of the Larynx in an Infant. *British Medical Journal*, January 15.
9. Boeckel.—On a Case of Ecthymatous Laryngitis, occurring during the Course of an Ecthyma of the Cutaneous Surface; Œdema of the Glottis; Tracheotomy; Cure. *Ann. de l'Oreille et du Larynx*, No. 6, 1875.
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12. Isambert.—On Gummy Tumors of the Epiglottis. *Ann. des l'Oreille et du Larynx*, December 31, No. 6.
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14. De Roubaix.—Gunshot-Wounds of the Larynx which necessitate Tracheotomy; Case. *La Presse Méd. Belg.*, No. 2, December 12, 1875.
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17. Haslund.—Cases of Polypus in the Larynx. *Hospitals-Tidende*, November 3, 1875.
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5. Porter, in a concise and practical paper under the above title, considers the causes of *aphonia* as affecting one of three factors in the formation of the voice. Those impairing the first element, the supply of air, are to be found in emphysema and the last stages of phthisis, where the aphonia is due to the small quantity and force of the air expelled from the lungs; and in a solution of continuity in the tracheal walls, as after tracheotomy or laryngotomy. The second set of causes, those which affect and change the vocal cords, may be due either to purely local lesions, acute and chronic inflammations and morbid growths, or to constitutional disease, phthisis, syphilis, and sometimes with the exanthemata. In phthisis, one third of a given number will probably have laryngeal complication. Louis reports ulceration of the larynx in sixty-three cases, out of one hundred and ninety-three of phthisis; Guy's Hospital, forty-seven out of one hundred and forty-five. Flint states that sixty-one cases out of the six hundred and seventy on which his recent work is based, had laryngitis. The author himself reports fifty-seven cases out of one hundred observed by him, and believes that the laryngeal disease is secondary to the pulmonary, and that it is rare to find the former without signs of the latter. Syphilitic affections of the larynx are also a common cause of aphonia. Durham gives thirty to forty per cent. as the frequency with which laryngeal complications are met with in the out-patient syphilitic service at Guy's Hospital. Condylomata, as a cause of aphonia, are reported by Gerhardt and Roth in eight out of fifty-four cases of syphilis. Mackenzie

reports but two in fifty-four cases examined by him. Porter's experience seems to accord with that of the latter, and herein he agrees with the reporter, who believes that condylomata of the larynx are only infrequently met with, and that the peculiar voice of the disease is usually, as stated by Porter, due to the erythematous condition of the mucous membrane. The points in differential diagnosis between phthisis, syphilis, and carcinoma, in the ulcerative process in the larynx, are so well given by the author, that we reproduce them in full:

In ulceration from syphilis, the mucous membrane of the palate is more liable to be first attacked, and afterward that of the epiglottis and surrounding folds. Infiltration and destruction of tissue go on rapidly and deeply, and the edges of the ulcers are red, thickened, and undermined. The thickening does not extend far beyond the margin of the ulceration, or in those parts not as yet invaded by ulceration, and is seldom extensive. The expectoration is thick, yellow, and accompanied by a putrid odor. In epithelioma, the ulceration is, as a rule, first seen outside the larynx, either on the edge of the epiglottis or on the membrane covering the outer surface of the arytenoid or cricoid cartilages, and rarely within the larynx. As the growth increases, marked and irregular thickening is seen around the ulcer, which presents a dirty-gray appearance, with raised edges. The progress of the disease is slow, but steady. In the early stage the expectoration is slight, but when the ulceration is at all extensive it becomes exaggerated and mixed with blood and pus. In phthisical ulceration, the first inroad is made in the mucous membrane over the upper and inner portions of the arytenoid cartilages, and on the ary-epiglottic folds. The epiglottis is not at first ulcerated, but is often thickened and dotted over with small patches of infiltration. The thickening is characteristic. The distinct outline of the arytenoid cartilages is lost; the ary-epiglottic folds look like large solid tumors, and the intra-arytenoid fold is often absorbed in the general thickening. The progress is slow, and, when any considerable surface is destroyed, the ulcer presents a ragged, worm-eaten appearance. There is more expectoration than in malignant disease, and it is more frothy and thinner than in ulceration from syphilis.

Of the third and last class of causes of aphonia, those which impede the action of the muscles moving the cords, especially the adductors and tensors, the principal members are mechanical obstruction, either due to the results of the infiltration of the muscular tissue with phthisical, syphilitic, or other deposits, to a growth preventing the movements of the muscles; to a thickening of the mucous membrane from chronic inflammation, and the presence of foreign bodies; also to bilateral and unilateral paralysis of these muscles; and, possibly, a reflex nerve-action from irritation elsewhere, as in granular pharyngitis.

7. Scheff recommends, in cases where there is no time to prepare, for operative purposes, an irritable larynx by training, or where careful and prolonged training is without effect, the following procedure for causing anæsthesia of the larynx, and states that he has used it frequently and successfully, especially in a case, the history of which is given in his article: On the evening before the operation, the larynx is penciled twelve times in quick succession with chloroform. This is followed by a pause of one hour, during which the patient is made to swallow ice-pellets and envelope the neck in cold applications, in order to lessen the amount of active hyperæmia which follows the chloroform application. Then follow twelve pencilings with a solution of the *hydrochlorate of morphia* (twelve grains to two drachms). The next day, gargles of tannin being used in the meantime, anæsthesia of the larynx is complete; the patient perhaps complaining of faintness, ringing in the ears, vomiting, and pain in the head.

8. Dr. Edis exhibited, at a meeting of the London Pathological Society,

January 5th, a specimen removed, *post mortem*, where death ensued thirty-seven hours after birth. On November 30, 1874, the mother was delivered of an apparently healthy, well-nourished female child, weighing twenty pounds. The child seemed to experience difficulty in breathing and sucking, and gave vent to a more or less continuous kind of feeble wail. Nothing abnormal could be detected on the most careful examination. It died within thirty-seven hours of its birth, and on examination, *post mortem*, a tense cyst of the size of a small hazel-nut was discovered attached to the side of the larynx, and nearly closing up the aperture; no other abnormal condition was detected.

12. Isambert states that all authors who have written on the manifestations of tertiary syphilis, seen in the air-passages, admit the occurrence, in the larynx and trachea, of gummy tumors, analogous to those which are observed upon the cutaneous surface, or in the natural orifices of the body, particularly the mouth and pharynx. At these points, should they be inaccessible to ocular inspection, their presence will be determined by the symptoms and by the descriptions furnished by the pathological anatomy. As an illustration to his remarks, he communicates the interesting history, with a drawing, of a case of gummy tumors of the epiglottis, the principal points in which are as follows: The patient, aged thirty, had had chancre some seven years previously, followed by mucous patches of the mouth; specific treatment was pursued, but the patient complained later, for many months, of severe pain, etc., in the throat, and it was probably at this time that the ulcerations were active, which had left extensive traces on the velum and in the pharynx. The patient had a nasal voice, and had had difficulty in swallowing fluids. A laryngoscopic examination gave the following results: On the free borders of the epiglottis, in the median line, was an ovoid tumor, the size of a canary's-egg; the epiglottis itself was thickened and hypertrophied throughout; on the right side, separated from the the first tumor by a deep groove, was a second, the size of a pea; below this a third, resting deeply on the cavity of the larynx, upon the corresponding vocal cord. On the opposite wall of the larynx, the last and smallest tumor, attached to the laryngeal face of the epiglottis, well down toward the anterior commissure of the cords. One vocal cord alone was visible, reddened and tumefied, but performing its functions. The arytenoid prominences and the ary-epiglottic folds were œdematous. The tumors described were of a pale rose-color, and were markedly distended by their enclosed contents. The symptoms of the patient were by no means commensurate with this local condition of affairs: the voice was weak and slightly nasal—there was slight cough and some dyspnœa at night; general condition good.

The amount of occlusion of the glottis demanding an energetic treatment, iodide of potash, in two to four gramme doses, was given daily, morning and evening frictions were made over the anterior cervical region with the "*napolitain*" ointment, and twice a week the epiglottis and neighboring parts were touched with a solution of either chloride of zinc or chromic acid.

The progress made, under three weeks of this treatment, was speedy, and at the end of the time he was discharged, with instructions to continue the use of the potash.

Five months later, the potash having been continued in the mean time, the tumors of the epiglottis were reduced to about one-fifth their original size.

16. Dr. O'Toole, alluding to the difficulty often met with in laryngoscopic operations, of training or causing the patient to hold his own tongue properly, states that the operator, by holding the tongue between and with the third and fourth fingers of the left hand, while, at the sa.. e time, the

laryngoscopic mirror is held in the proper position by the thumb, index, and second finger of the same hand, will succeed perfectly, and be entirely independent of his patient's assistance. Constant exercise of the third and fourth fingers will enable him to grasp the tongue as firmly, and hold it as steadily, as he can with his thumb and index-finger.

18. Sanders's elaborate article is based upon the histories of four cases of foreign bodies in the air-passages, occurring in his practice and communicated by friends. These are followed by an extensive review of the literature of the subject, and a complete bibliography which will be found useful for reference. In conclusion, the author sums up the result of his own experience, and that of others, in some general remarks and conclusions upon the form and character of the glottic opening; the pathological changes caused in the air-passages by the presence of foreign bodies—their symptomatology, diagnosis, prognosis, treatment, etc. In conclusion, the subject of concretions in the air-passages receives his attention, and again a very complete bibliography of this rare occurrence is furnished the reader.

19. Murchinson describes a series of cases which he had the opportunity of observing in the Hebrides, and which he considers to be *angina Ludovici*. The disease attacked children and young persons, the symptoms always being the same, and affected the weak and anæmic. All the cases seemed to be idiopathic, occurred in winter, and in close succession. It was ushered in by chill, a stiffness of the muscles of the tongue and throat, and general *malaise*. After these early symptoms, a hard swelling in the vicinity of the sub-maxillary gland, in the gland itself, and in the entire floor of the mouth, followed, so that mastication, deglutition, and respiration, were very much embarrassed. From this centre the disease gradually extended, until the parotid and thyroid glands were involved; the tumor became harder, and pressed the tongue upward. The condition here described lasted some twelve days, when the parts presented the appearance of an immense goitre. Some of the cases ended in resolution, others in the formation and discharge of pus, but none in gangrene or death. In every case a marked induration remained, which could only be removed by prolonged treatment by iodine.

22. Robinson believes that *follicular sore-throat* is not caused or brought on by any special profession, nor due to any accidental circumstance or concatenation of occasional conditions which may be present more or less permanently; that it is essential, to the *primary production* or development of the follicular disease, that we should have the *diathetic* or *constitutional* tendency which is usually, if not always, present in these cases. This *catarrhal diathesis* must be treated by some drug which will be eliminated from the system through the mucous linings; mere local treatment cannot cure the disease—a combination of local with general treatment is essential. The mucous lining of the pharynx in this disease is thickened, hypertrophied, and the morbid change involves all the soft parts which underlie the membrane. The cellular and muscular layers may be affected with plastic exudation, owing to the extension of the chronic inflammatory process, and the result of these processes upon the nerve-filaments of the pharyngeal plexus is to cause a chronic neuritis, hyperæsthesia, degeneration, and atrophy of the muscular layer. The hyper-glandular development of the air-passages is in some way or other connected with this chronic neuritis. The amount of trouble is not at all in proportion with the amount of the inflammatory condition. In certain forms of erythematous sore-throat, for instance, the mucous membrane is much more acutely inflamed than in follicular disease, but there is less nerve-trouble consecutive to it. When the glands become ulcerated, the doctor believes that this ulceration may be explained by a want of nerve-force generated in those peripheral extremities where there doubtless exists

a condition of interstitial neuritis, and, owing to the consequent thickening so produced, compression is exercised to such a degree upon the nerve-fibres that their function is more or less absolutely abolished.

The pharyngeal plexus, and the nerve tissues which go to form it, being thus affected, the phenomena of hyperæsthesia and paralysis which pass within the throat and larynx, and manifest themselves also in the ear, soft palate, etc., may be readily accounted for, the tendency of a chronic neuritis being to propagate itself from the periphery toward nervous centres, and thus involve other branches of the same trunk or plexus originally implicated.

25. Apart from the mucous patches or papules, the ulcerations and nodular infiltrations which so commonly occur in the mouth during the course of a constitutional syphilis, Schuster calls attention to a condition or appearance of the mucous membrane which either exists alone or in combination with certain characteristic manifestations of syphilis, and which may be either constant or intermittent in its appearance. This thickening or *cloudiness* of the buccal mucous membrane, to which he refers, is most commonly seen on the tip of the tongue, its edges, the lower lip, and the mucous membrane lining the cheeks; it may deck the whole anterior surface of the tongue, and occasionally all the parts mentioned are covered by small bluish-white flat granulations. Again, these opacities may appear alone on the anterior half of the tongue, in concentric lines. The condition described is distinguished by its bluish-white mother-of-pearl color, like the hard white of an egg, as well as by its persistence. The opacities have a marked predilection for those points which suffer pressure from the teeth, etc., or are irritated by chemical changes. The nasal mucous membrane is sometimes likewise affected, commonly at the border of the bony septum. The condition occurs but seldom in women, frequently in men, and in the latter the catarrh of the mouth, caused by the use of tobacco, is an active predisposing cause. The author has seen these bluish opacities but once in a non-syphilitic person, and then they were only transient; commonly the previous syphilitic history of the patient can be proved. He considers it to be an important question whether these opacities are an indication of an uncured syphilis, or whether they are a result of the action of mercurials. His observations have shown him that they do not alone follow a mercurial course quickly, but may still appear after the lapse of years. He admits the difficulty in some cases of distinguishing the appearances described, single bluish elevations, as simple opacity or cloudiness of the epithelium, from papules, and that a close relationship exists between the two.

The fact, that a specific treatment does not cause their disappearance, proves nothing against their syphilitic nature. The cases which he gives show that they do not necessarily depend upon the previous use of mercury, and that they are more commonly the signs of a syphilis, the intensity of which has been lessened, either by a specific course of treatment, lapse of time, or a special resistance of the organism. Their presence testifies that the previous syphilis does not at present militate against the health of the affected individual, and that, finally, specific treatment, especially mercurials, does not succeed in markedly benefiting them.

Their treatment, when they exist independently of other lesions, will consist in the removal of all local mechanical and chemical causes of irritation, great cleanliness of the mouth, avoidance of tobacco and spicy food, and the direct application of a solution of nitrate of silver, every two days, after a careful drying of the affected points. When inveterate and long-continued complicating lesions coexist, which have a previous syphilis as their cause, Schuster recommends a specific course of treatment. When the epithelial opacities exist alone, a *provocation* course (*see* Schuster on the "Treatment and Cure of Syphilis," Berlin, 1874) is advised, together with the local applications. Specific courses appear to be only successful in those cases where the syphilitic manifestations continue to appear.

27. Dobell offers the following explanation of the function of the uvula: He says that, looking into the pharynx of a patient suffering from a severe nasal catarrh, he saw the watery secretions from the back of the nose pouring down in a continuous stream from the tip of the uvula, on to the dorsum of the tongue. It was evident that they were collected to this point from all the surrounding parts, and that the uvula acted as a conduit to bring them to the front of the epiglottis, whence they might be safely carried down the throat by repeated acts of deglutition; whereas, had it not been for the uvula, they would be liable to drip behind the epiglottis, and thus cause constant discomfort by getting into the larynx.

31. The principal point of interest in this case is in relation to the new form of tracheotomy-tube, which was substituted for an ordinary silver one, some two weeks after the operation. It was single, of ordinary tracheotomy shape, and constructed extirely of flexible India-rubber. It could be inserted easily without a pivot, and did not require to be changed more than once in every two days. As far as could be judged, from its use in this one case, it was introduced with less pain, was more comfortable to the patient, and caused far less irritation, than a metal one. It is not proposed that this form of tube shall be substituted for the metal one at the time of the operation, but to obviate the many well-known disadvantages the latter has, when required to be worn for more than a few days. It may be that the elastic tube can be used with advantage throughout, its introduction being effected at the time of the operation, by means of a proper pivot or forceps.

32. Mr. Gould showed for Mr. Heath, at the meeting of the London Pathological Society, January 18th, two sets of teeth, each consisting of a gold plate and two teeth, which had passed from the mouth of a young lady during a fit. When seen, there was some pain of the left side of the neck, and also in swallowing, accompanied with slight dyspnœa; after the passage of a bougie the patient was able to swallow easily. In three days the dyspnœa had much increased. Dr. Morell Mackenzie was able to demonstrate, with the laryngoscope, the presence of one set of teeth just below the vocal cords. Seventy-eight hours after they had been swallowed, Mr. Heath removed, by tracheotomy, the set that had lodged in the larynx; the other set, that had found its way into the œsophagus, was passed the same evening at stool.

33. The interesting features of this case, aside from the use of a long India-rubber tube in the trachea, were: the obscurity of the cause of the dyspnœa, though it probably depended upon an enlarged thyroid gland pressing upon the trachea, and other symptoms; the coincidence of their disappearance with the decrease in the size of the thyroid, which took place one week after the tracheotomy had been done; and the disappearance of the former after a severe hæmorrhage from some vessel in the thyroid body. The trachea was opened just above the enlarged isthmus of the thyroid, and an ordinary silver tracheotomy tube inserted, but with little or no amelioration of the patient's dyspnœa. A portion of a large-sized Thompson's India-rubber catheter was passed through the canula, and, in leaving this and passing into the trachea, the catheter met with a slight resistance, which was easily overcome. Immediate improvement in the patient's respiration followed. On the second day after, the silver tube was withdrawn over the flexible catheter, and then, in place of the latter, was introduced a piece of India-rubber tubing about five inches long, and with a bore the size of a No. 8 catheter. This tube was withdrawn at the end of three weeks, and the wound dressed. A week or two later, all

symptoms of dyspnœa had disappeared, and, with the exception of a slight hoarseness and being weak, the patient had quite recovered.

36. Wernher supplements the case of complete dysphagia and sudden death, caused by an ossification and hypertrophy of the cricoid and arytenoid cartilages, which obliterated the lumen of the œsophagus, reported by Travers, by a case of a man of fifty-four, who could only swallow fluids with difficulty and pain. There was no fever, nor any interference with respiration; normal voice; larynx mobile; and the mucous membrane of pharynx and mouth presented no abnormalities. The result of the laryngoscopic examination was negative in its results, but the finger, introduced deeply into the pharynx, detected a marked protrusion of the cricoid cartilage toward the vertebral column. The œsophageal sound, which could be introduced painlessly, met with the same obstacle. The author diagnosticates the condition as one of hypertrophy of the cricoid cartilage, and considers the case interesting, from the chronic progression of the affection, and the complete absence of all inflammatory reaction.

39. The performance of this operation was alluded to in our last report, but want of space prevented any of its details being given; its importance, its rarity, and the question whether the operation is done as often as it ought to be, lead us to present a short summary of the most important points in the history of the case and operation. Rosenbach, in his article, states that the operation was first introduced by Langenbeck, though described previously by Lidal and Malgaigne, first performed by Prat, and first for the removal of a foreign body from the larynx by Lefferts. The subject of the present operation, a man aged forty-five, suffered from aphonia, dyspnœa, and dysphagia. On depressing his tongue, an irregular swelling of some size projected over it. It was reddish, irregular, and apparently about the size of a walnut, with several outgrowths or processes. Its lower boundaries could not be reached with the finger. Its attachments could be felt at the back of the pharynx, at the level of the os hyoides. May 3d, tracheotomy was done, and subsequently unsuccessful attempts were made on several occasions to remove the mass by forceps. Portions torn off proved to be round-cell sarcoma. May 15th, the operation of sub-hyoidean pharyngotomy was undertaken, as follows: The head was lowered, to bring the seat of the operation on a level with the windpipe. The skin was divided to the extent of three and one-half inches, immediately below the hyoid bone. Then, by means of two pair of forceps, the anterior fibres of the thyro-hyoid membrane and some subcutaneous tissues were torn across. The sterno-hyoid and thyro-hyoid muscles were divided, and more and more of the thyro-hyoid membrane cut through. In order not to wound the epiglottis, a silver catheter was pushed over the back of the tongue, so that its point hitched in the fold between the epiglottis and the tongue, and so pressed the mucous membrane (with the yet undivided layer of the thyro-hyoid membrane) forward, and both were then cut through upon the catheter. The wound subsequently needing to be enlarged, the epiglottis was then seized, drawn forward and held with fenestrated forceps, the mucous membrane put upon the stretch, the hyoid bone dragged up and the epiglottis down, and the pharynx was well exposed. One lobe of the tumor already protruded, resembling an ordinary nasal polypus. It was seized and removed. A portion now remained on the right side, attached below somewhat firmly to the œsophagus, and to remove it the mucous membrane had almost all to be severed as far as the lateral thyro-hyoid ligaments. The stump or pedicle of this latter portion was ligated with three ligatures, brought out through the wound, on account of hæmorrhage. The cutaneous wound was now brought together by deep sutures, and dressed with salicylic-acid wadding. On May 22d the patient swallowed well. On the

24th the tampon canula was removed, and the sutures next day. On May 31st the patient was discharged cured. An examination of the tumor proved it to be a polypoid, round-celled sarcoma, whose basis consisted partly of firm connective tissue, and which had imbedded in it, in prominent parts, many portions of mucous membrane.

40. At a recent meeting of the Surgical Society, Fournier presented the history of a case of syphilitic degeneration of the sublingual gland, an affection which he claims to be exceedingly rare, and of which he has seen but one example. The history of the case is briefly as follows: The patient, thirty years old, had complained for some two weeks of a certain amount of difficulty in speaking and swallowing, and, upon searching for a cause in his mouth, detected under the tongue, upon the right side, a painless tumefaction. The voice was only very slightly altered, the patient speaking as if a foreign body were in the mouth. Deglutition was relatively but little interfered with; there was no other local or general trouble. The various functions of the body were satisfactorily performed, and the general health was perfect. A local examination showed a slight induration in the right sub-lingual fossa, easily mapped out by means of the finger, and situated beneath the mucous membrane of the floor of the mouth, the former being in all respects intact. It was oblong-ovoid, resembling a date in configuration, and there could be no question but that it was an enlarged tumefied sublingual gland. To the sense of touch it conveyed an impression of resistance and firmness.

In making up a diagnosis as to the character of the lesion described, the absence of all inflammatory action excluded a phlegmonous inflammation; the manifest consistence of the tumor, a cystic degeneration; the age of the patient and the rapid development of the tumor precluded the idea of cancer. The question of its being an adenoid production was more difficult to decide, but, remembering that the patient was an old syphilitic subject, the author deemed it possible that the actual cause of the tumefaction was a tertiary infiltration of the sublingual gland, similar to those sometimes observed in the submaxillary gland and the pancreas.

A specific treatment, 25 grammes of iodide of potash in 500 grammes of sirup, given in quotidian progressive doses of three, four, five teaspoonfuls, resulted in an immediate, and, according to the author, surprising improvement, and the rapid resolution of the induration under the use of the potash proves conclusively, to his mind, the specific nature of the lesion —a tertiary degeneration of the sublingual gland. As to its pathological nature, whether it were due to a simple hyperplasia, an analogous hyperplasia to that found in the usual form of syphilitic sarcocele, or to a gummy infiltration, the author prefers to venture no opinion.

41. Schönborn, at a meeting of the Medical Society of Königsberg, held January 25, 1875, related the history of a case of entire extirpation of the larynx, on account of carcinomatous disease. The patient, a man aged seventy-two, was, at the time of the report (three days after the operation), progressing satisfactorily. (The patient's death was reported a few days later.)

Miscellany.

Appointments, Honors, etc.—Dr. William M. Polk has been appointed Professor of Materia Medica and Therapeutics in the Bellevue Hospital Medical College, and Dr. E. G. Janeway Professor of Pathological Anatomy and Histology, Diseases of the Nervous System, and Clinical Medicine. Dr. L. M. Yale has been appointed Lecturer Adjunct upon Orthopedic Surgery, in the same college, and Dr. A. A. Smith Lecturer Adjunct upon Clinical Medicine. Miss Clara Marshall, M. D., has been elected to the chair of Materia Medica and General Therapeutics in the Women's Medical College, Philadelphia, in the place of Dr. Charles H. Thomas, resigned. Dr. James B. Hunter has been appointed one of the consulting physicians to the New York Infirmary for Women and Children. Dr. J. G. Adams has been appointed Centennial Orator for the New York Academy of Medicine. Dr. Carlos F. Macdonald has been appointed Superintendent of the Asylum for Insane Criminals, at Auburn. Dr. Lewis Slusser has resigned the position of Superintendent of the Northern Ohio Asylum for the Insane, and Dr. J. Strong has been appointed in his place. Dr. D. J. Boughton has been appointed Superintendent of the Hospital for the Insane at Mandota, Wisconsin, *vice* Dr. McDill, deceased.

Dr. Robert Liveing has resigned his appointment as Physician to the Middlesex Hospital. Dr. Robert Barnes has resigned his seat at the Midwifery Board of the Royal College of Surgeons. Mr. Critchett has been elected to the post of Ophthalmic Surgeon at Middlesex Hospital. The professorship of Hygiene in the Army Medical School at Netley, worth £1,000 per annum, is rendered vacant by the death of Prof. Parkes. Prof. Lebert, of the University of Breslau; Prof. Jaccoud, of Paris; and Prof. Stromeyer, of Hanover, are among the distinguished foreigners expected to visit Philadelphia during the Centennial Exhibition. Prof. Henri Roger has been elected President of the French Medical Association. The following changes have taken place at King's College, consequent upon the resignation of the chair of Medicine by Dr. Johnson: A chair of Clinical Medicine has been established, and Dr. Johnson has been appointed professor, he retaining, at the same time, his present appointment of physician to the hospital; and Dr. Beale has been appointed Professor of Medicine. Mr. Henry Arnott has resigned the appointment of Assistant Surgeon to St. Thomas's Hospital, and is about to retire from the active practice of the profession. Mr. Fairlie Clarke has resigned the appointment of Assistant Surgeon to the Charing-Cross Hospital, and intends to devote himself to general practice.

Graduates of 1876.—The following list gives the number of graduates at the various colleges as far as have been reported:

Bellevue Medical Hospital, New York	159
Jefferson Medical College	146
University of the City of New York	133
University of Pennsylvania	124
University of Louisville	112
College of Physicians and Surgeons, New York	93
Medical College of Ohio	90
Louisville Medical College	86
Rush Medical College, Chicago	79
Missouri Medical College	67
University of Nashville	64
St. Louis Medical College	47
McGill University, Montreal	34
Washington University, Baltimore	32
Atlanta Medical College	30
Medical College of State of South Carolina	29
Cincinnati College of Medicine and Surgery	27
Trinity College Medical School, Toronto	18
Medical College of Virginia	17
University of California	13
University of Georgetown	13
Woman's Medical College, Philadelphia	12
Columbian University (National Medical College)	12
Medical College of the Pacific (November, 1875)	11
Woman's Hospital Medical College, Chicago	10
Evansville (Indiana) Medical College	8
Howard University, Washington	7
College of Physicians and Surgeons, Kingston, Ontario	6
Woman's Medical College, New York	4

Excretion of Urea during Exercise.—The careful investigations of Dr. Parry into the amount of nitrogenous excreta eliminated by Mr. Weston, during his pedestrian exercise, have shown results that appear to correspond very closely with those formerly obtained by Dr. Flint. There seems no doubt that a decided increase in the amount of urea and other organic constituents takes place during these walking-feats.

Alumni Association of Jefferson Medical College.—At the last annual meeting of this Association Prof. Gross was elected President; Drs. W. C. Atlee, Elwood Wilson, and J. M. Nolty, Vice-Presidents; Thomas H. Andrews and Richard J. Dunglison, Secretaries; and Prof. B. H. Rand, Treasurer.

Journalistic Notes.—Prof. J. H. Pooley announces a new monthly, the *Ohio Medical and Surgical Journal.* It will be published in Columbus. The first number is promised this month.—The *Sanitary Journal for Scotland* is the title of a new monthly issued in Glasgow.

Correction.—In Dr. Jerome Kidder's advertisement, in the March number of this JOURNAL, "superior electro-*chemical* apparatus" should have read "superior electro-medical apparatus."

Treatment of the Insane in America.—Dr. Bucknill is publishing in the *Lancet* a detailed account of his experience and observation regarding the treatment of the insane in this country. His communication in that journal of March 25th charges the alienists of the United States with almost willfully ignoring the experience of other countries in the matter of abandoning mechanical means of restraint. Is it possible that we are the victims of a prejudice on the subject of insanity as unpardonable as that which prevails in Great Britain regarding the use of ether and chloroform? It would almost seem so, judging from the following pointed remarks which we find in Dr. Bucknill's last communication:

> May we not ask, Where are the wonderful ingenuity and inventive resource of the country if its skilled physicians allow themselves to be so easily defeated by the caprice of madmen who are so readily managed elsewhere? And so we might go through all the classes, were it worth while to repeat a thrice-told tale, and were not the great book of practical exposition worth infinitely more than all which language can convey—a book held open in this country from end to end, with men of large experience and skill eagerly desirous to turn its pages to every earnest student, and in no spirit of arrogance or self-sufficiency, but in the truest desire to show a straighter path

> and a higher aim in a great department of the great art and science of healing.
>
> Is it surprising that, at the present time, the management of asylums for the insane in America is the subject of mistrust with the people? The Americans, who are about the best informed, most inquisitive, and widely-traveled people in the world, are not likely to be ignorant of the treatment of the insane in other countries, nor to be satisfied with the assurances of an official class that the most enlightened and advanced system of treatment is inapplicable in their own country.

After an apology for the severity of his criticism, he says:

> But that the American nation, whom I have learned to know only to respect and love, should remain under the incubus of this professional prejudice; that the American superintendents, among whom I count some of my dearest friends, should lag lamentably behind the science of their age; that the greatest reform in the treatment of mental disease, inaugurated by and among Anglo-Saxons, should be bounded by national barriers, and denied to the largest community of the Anglo-Saxon race —this I could not sit down with a quiet conscience silently to think upon. Far be it from me to dogmatize my psychiatric colleagues in the United States; but I may be permitted earnestly to entreat them to take a wide and general view of their position in their own social surroundings, and in the wide world of science.

The Late Dr. Rodenstein.—At a meeting of the New York Obstetrical Society, held March 21, 1876, the President, Dr. T. G. Thomas, in the chair, the following resolutions relating to the death of their late Fellow, Dr. Charles F. Rodenstein, of Tremont, New York, were adopted:

Whereas, This Society has learned with deep regret of the death of Dr. Charles F. Rodenstein: therefore be it

Resolved, That this Society recognized in the late Dr. Rodenstein an active and valuable Fellow, whose regular attendance at its meetings, costing him a journey of many miles, was a proof of his professional zeal and constant interest in the welfare of the Society.

Resolved, That the death of Dr. Rodenstein is a loss to the profession of an able and energetic physician, and to the Society of a gentleman of large culture and genial disposition.

Resolved, That the Society send to the bereaved family of Dr. Rodenstein their heart-felt sympathy in their affliction.

Resolved, That a copy of these resolutions be sent to the medical journals of this city for publication.

JOHN BYRNE, M. D.,
JAMES F. HUNTER, M. D., *Committee.*
CHARLES S. WARD, M. D.,

T. GAILLARD THOMAS, *President.*
PAUL F. MUNDÉ, *Secretary.*

At a meeting of the Yonkers Medical Association, held March 19th, the following resolutions were adopted:

Whereas, Death has removed from our midst one of our most valued members, and esteemed ex-President, Dr. Charles F. Rodenstein: therefore be it

Resolved, That in the death of Dr. Rodenstein we mourn the loss of a valued brother, a true-hearted, noble man, a skillful physician, and a devoted student of medical science.

Resolved, That we tender to the family and friends of our departed brother our heart-felt sympathy in this dark hour of their affliction.

Resolved, That we attend the funeral of Dr. Rodenstein, from his late residence at Tremont, in a body.

Resolved, That a copy of these resolutions be sent to the family of Dr. Rodenstein, and also published in the NEW YORK MEDICAL JOURNAL, the *Medical Record*, and the local newspapers.

J. FOSTER JENKINS, M. D.,
J. H. POOLEY, Sr., M. D., *Committee.*
E. PEUGNET, M. D.,

Deaths from Chloroform.—We recorded last week a death from chloroform, and we have again this week the same painful duty. The average number of cases of death from chloroform seems by no means to diminish, notwithstanding the great extent to which ether has superseded chloroform during the last few years, in which so great a mass of evidence has been accumulating in these pages in favor of the greater safety of ether and nitrous-oxide gas as anæsthetic agents. An inquest was held at Stafford lately on the body of Jeremiah Tooth, a laborer, who had died in the infirmary while under the influence of chloroform. Dr. Reid, the house-surgeon, said he administered the chloroform in the presence of five other medical men, as the deceased was about to have the elbow-joint amputated. He had previously examined the deceased with the stethoscope, and obtained no evidence whatever of heart-disease. Three drachms, about an average quantity, were administered, and while the deceased was taking it his pulse stopped, and he died instantly. The usual methods of restoring animation were adopted, but without success. A *post-mortem* examination showed that the heart was larger than usual, and that there were other traces of disease.—*British Medical Journal*, February 5th.

The *Medical Times and Gazette* of April 1st reports the death of a lady in Liverpool from chloroform administered by a dentist. The jury found that death arose from "misadventure."

Dr. J. G. Kerr, of Canton.—Information received from China brings the intelligence of the resignation of Dr. Kerr, as one of the physicians and surgeons of the Missionary Hospital of Canton, an institution to which he devoted his best energies for a period of nearly a quarter of a century. His reasons for taking this step are, the health of his family and the want of educational facilities for his children. In accepting his resignation the Board of Missions tendered Dr. Kerr their thanks for his long-continued and valuable services, and their best wishes for his welfare and happiness. During his residence at Canton Dr. Kerr earned an enviable reputation, not only as a physician but also as a surgeon. As a lithotomist he met with a degree of success hardly equaled by any American or European surgeon. Latterly he had frequently as many as thirty, thirty-five, or even forty cases a year, with a remarkably slight mortality.—*Philadelphia Medical and Surgical Journal.*

College of Pharmacy of the City of New York.—The forty-sixth annual commencement was held on Tuesday evening, March 21, 1876, at Chickering Hall. After the opening address by the President, Paul Balluff, the degree of "Graduate in Pharmacy" was conferred upon thirty-nine gentlemen. Prof. P. W. Bedford awarded the alumni prizes: the first, a gold medal, to Henry C. Schrank; the second and third, of equal value and for equal grades, to Adolph Henning and Henry Millar. Prof. Edward Curtis, M. D., delivered the address to the graduates, after which the valedictory was pronounced by H. Lieber Coit, of the graduating class.—*Medical Record.*

A Family of Centenarians.—Mrs. McQueen, supposed to be the oldest woman in Aberdeenshire, died recently at New Pitsligo, at the age of one hundred and seven. She was born in the parish of Marnoch, Banffshire, in 1768. The husband of this centenarian, John McQueen, died at Pitsligo, at the age of one hundred and two; and his brother, Alexander McQueen, was one hundred and three years old at his death;

and a son of Alexander died at the same place aged ninety-three. Within the past thirty-eight years five centenarians have departed this life in New Pitsligo.—*British Medical Journal.*

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from March 14 *to April* 13, 1876.

McCormick, Charles, Surgeon.—To proceed to New York City, and, on arrival, to report by letter to the Surgeon-General. S. O. 65, A. G. O., March 31, 1876.

Milhau, J. J., Surgeon.—Leave of absence extended four months. S. O. 49, A. G. O., March 13, 1876.

Forwood, W. H., Assistant Surgeon.—Granted leave of absence for one month, with permission to leave limits of department. S. O. 43, Department of Texas, March 11, 1876.

Bentley, E., Assistant Surgeon.—Assigned to duty at Camp Independence, Cal. S. O. 25, Department of California, March 18, 1876.

Carvallo, C., Assistant Surgeon.—Ordered to Fort Union, New Mexico, for medical treatment. S. O. 32, District of New Mexico, March 24, 1876.

Meacham, F., Assistant Surgeon.—Granted leave of absence for one month. S. O. 56, A. G. O., March 21, 1876.

Fitzgerald, J. A., Assistant Surgeon.—When relieved by Assistant-Surgeon Ainsworth, to report in person to these headquarters for assignment to duty. S. O. 34, Department of the Columbia, March 24, 1876.

Hall, J. D., Assistant Surgeon.—Granted leave of absence for two months. S. O. 63, Military Division of the Atlantic, April 11, 1876.

Ainsworth, F. C., Assistant Surgeon.—Assigned to duty as Post Surgeon at Sitka, Alaska. S. O. 34, C. S., Department of the Columbia.

Adair, G. W., Assistant Surgeon.—Assigned to duty as Post Surgeon at Fort Richardson, Tex. S. O. 43, C. S., Department of Texas.

Finley, J. A., Assistant Surgeon.—Granted leave of absence for one month from June 1, 1876, with permission to apply for an extension of one month. S. O. 54, Department of the Missouri, March 23, 1876.

Bedal, S. S., Assistant Surgeon.—To report to Lieutenant-Colonel George P. Buell, Eleventh Infantry, for duty as senior medical officer, with the "Scouting Camp" to be established on Devil's River, Tex. S. O. 50, Department of Texas, March 22, 1876.

Maus, L. M., Assistant Surgeon.—Assigned to duty as Post Surgeon at Chattanooga, Tenn. S. O. 39, Department of the South, March 16, 1876.

Comegys, E. T., Assistant Surgeon.—Assigned to duty at Plattsburg Barracks, N. Y. S. O. 58, Military Division of the Atlantic, April 4, 1876.

By S. O. 71, A. G. O., April 8, 1876, the following changes are made:

Happersett, J. C. G., Assistant Surgeon.—Relieved from duty in Department of the Missouri, ordered to Philadelphia, and to report thence by letter to the Surgeon-General.

Hubbard, V. B., Assistant Surgeon.—Ordered to Department of California for assignment to duty.

Reed, W., Assistant Surgeon.—To accompany recruits to Department of California, and upon completion of this duty ordered to Department of Arizona for assignment to duty.

The following-named officers are relieved from duty in the Military Divison of the Atlantic and ordered to the Department of Texas for assignment to duty:

Goddard, C. E., Surgeon.

Comegys, E. T., Assistant Surgeon.

Shannon, W. C., Assistant Surgeon.

The following-named officers are relieved from duty in the Division or Department where they are now serving, ordered before the Army Medical Board for examination for promotion, and upon its completion to the divisions or departments set opposite their respective names for assignment to duty:

Meacham, F., Assistant Surgeon.—From Military Division of the Atlantic to Department of Texas.

Styer, Charles, Assistant Surgeon.—From Department of the South to Military Division of the Atlantic.

Corson, J. K., Assistant Surgeon.—From Department of the South to Military Division of the Atlantic.

Weisel, D., Assistant Surgeon.—From Department of the South to that of Texas.

Kimball, J. P., Assistant Surgeon.—From Department of Dakota to Military Division of the Atlantic.

Ewen, C., Assistant Surgeon.—From Department of the Gulf to Military Division of the Atlantic.

The following, upon completion of their examination, to report by letter to the Surgeon-General:

Horton, S. M., Assistant Surgeon.—From Department of Texas.

Jaquett, G. P., Assistant Surgeon.—From Department of the Platte.

Whitehead, W. E., Assistant Surgeon.—From Department of Texas.

Buchanan, W. F., Assistant Surgeon.—From Department of Texas.

McElderry, H., Assistant Surgeon.—From Department of the Columbia.

Bentley, E., Assistant Surgeon.—From Department of California.

Girard, J. B., Assistant Surgeon.—From Department of Arizona.

King, J. H. T., Assistant Surgeon.—From Military Division of the Atlantic.

Hamilton, J. B., Assistant Surgeon.—Resignation accepted by the President, to take effect May 31, 1876. S. O. 71, A. G. O., April 8, 1876.

Obituary.

Dr. James W. Wilkie, Superintendent of the Asylum for Insane Criminals, at Auburn, N. Y., died March 13th, aged fifty years, of organic disease of the heart.

The profession has suffered a great loss in the death of Dr. Edmund A. Parkes, Professor of Military Hygiene in the

Army Medical School at Netley, England, which took place March 15th. Dr. Parkes is well known in this country by his admirable volume on Hygiene, and by his other scientific work on various subjects. The *Lancet* says of him: "Had he brought the same energy and ability to bear upon the art of destroying human life that he did in saving and prolonging it, he would probably have died a peer or titled man."

It is with deep sorrow that we announce the death of Sir John Cordy Burrows, of Brighton. He expired March 21st, in the sixty-third year of his age. He was a justice of the peace for the borough of Brighton, of which he had been three times mayor. He was knighted in 1873, after his third mayoralty, at the request of his fellow-citizens, who two years previously had honored him with a public presentation of a testimonial, consisting of a model in silver of the fountain on the Steyne (weighing 192 ounces), a silver tea and coffee service, and a carriage and pair of horses. Early in his career he started the Literary and Scientific Institution of the town, and in time founded many kindred institutions.—*Lancet.*

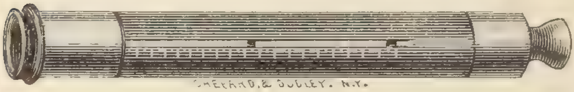
Dr. John S. Parry died at Jacksonville, Florida, on the 11th of March, having spent the two previous winters in the South with so much benefit as to lead his friends to entertain hopes of his ultimate recovery. Dr. Parry was born at Druemore, Lancaster County, Pa., January, 1843. He graduated at the University of Pennsylvania, Medical Department, in the spring of 1865, and was elected a Resident at the Philadelphia Hospital soon after. In the spring of 1867 he was appointed on the staff of visiting obstetricians to that hospital, which position he held until his death. As a lecturer he was well known, and was peculiarly fitted for the position of clinical teacher by his extensive reading, his wonderful memory, and his extremely accurate powers of diagnosis. During the brief term of his medical career he was a frequent and always valued contributor to the medical journals, his articles possessing great interest, originality, and research. His mind was never at rest, in health or sickness, but was unceasingly occupied with the advancement of medical knowledge. One of the earliest organizers of the Obstetrical Society, he filled its various offices to the satisfaction of all, was ever ready in debate, contributing largely to the interest of its proceedings, and was President of the Society at the time of his death. He was an active member of the College of Physicians and of the Pathological Society; of the latter he was Vice-President. He also held the positions of Physician to the Department for Diseases of Women and Children in the Presbyterian Hospital, and Visiting Surgeon to the State Hospital. In every relation which brought him in contact with his medical brethren, he speedily won their respect and affection, for his unbending and straightforward integrity, his sterling character, and his uniform kindness and courtesy. While prostrated with the disease to which he was so soon to fall a victim, he prepared for the press his work on extra-uterine pregnancy, and edited the American edition of Leishman's "Midwifery," remaining North until the end of December in order to finish the work which he too truly anticipated would be his last. His early death, in his thirty-fourth year, will cause a gap in many circles which it will be hard to fill, and he will long be remembered by the many friends and patients to whom he was dear. —*Philadelphia Medical Times.*

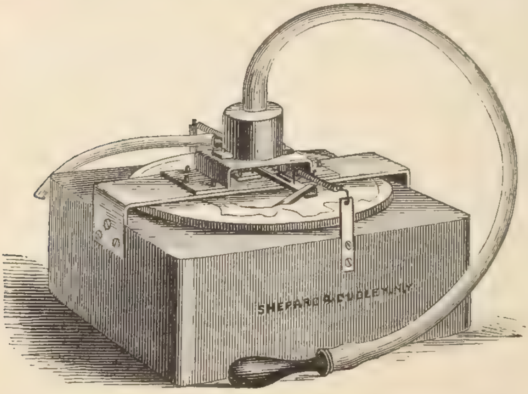
Dr. James Warburton Begbie, a distinguished physician and clinical teacher of Edinburgh, died in that city February 25th, aged forty-nine years. He had a very large consulting practice, and overwork is said to have been the cause of his death. The *Lancet* says of him: "His death has produced a sensation of grief in Scotland which the death of only a young, foremost, sagacious, and most popular physician, could have produced. There have been physicians in Scotland who have made a greater mark in medical doctrine and in medical discovery. But there have been none who have been more widely consulted or more deeply trusted by the people of Scotland and of the north of England. We are probably not far wrong in estimating that Dr. Begbie's professional income varied from £7,000 to £10,000 a year, which, for a consulting physician in Edinburgh, is probably unexampled. Sir James Simpson's case was that of a specialist, and altogether different. Dr. Begbie's work was most arduous, involving not only a large amount of consulting practice in his own house, but long and fatiguing journeys by rail and road.

The recent death is announced of Dr. Henry Letheby, of London, at the age of sixty years. He had long occupied a prominent position in connection with sanitary matters, particularly those relating to chemical and medical jurisprudence. He had held the post of Lecturer on Chemistry and Toxicology in the Medical School of the London Hospital, and had been Medical Officer and Chemical Analyst to the City of London. He was also the author of several valuable works and papers.

The death of Sir John William Fisher, many years Surgeon-in-Chief to the Metropolitan Police Force, one of the oldest and most esteemed members of the profession, took place on the 22d of March, after a long and painful illness, in the eighty-ninth year of his age.—*Lancet.*

DR. HOLDEN'S INSTRUMENTS.





These cuts were not received from the engraver in time to be inserted in their proper place in Dr. Holden's article in this issue. (*See* p. 479.)

NEW YORK

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MEDICINE AND THE COLLATERAL SCIENCES.

VOL. XXIII.] JUNE, 1876. [No. 6.

Original Communications.

ART. I.—*The Treatment of Anteflexions of the Uterus.* By ELY VAN DE WARKER, M. D., Syracuse, N. Y.

IN medicine, as in law, the influence of precedent and well-established authority often obstructs the way of truth; and, when they are finally set aside, yields only to the pressure of accumulated facts. It requires a firmer array of facts to stem the current of opinion, which is the outcome of authority, than to establish a natural law. This is about the relation that intra-uterine mechanical support bears to standard authority in gynecic surgery. This force of authority is rendered still stronger in this relation by the fact that the history of intra-uterine stem-treatment is one of repeated failures up to the year 1870; and many of the recent works upon diseases of women speak either doubtingly of it, or condemn it in unmeasured terms. Importance, therefore, attaches to all additional experience that tends to prove the value of the intra-uterine stem in practice. This becomes all the more important in view of the difficulties which surround the treatment of the various degrees of anteflexion and -version. I speak for myself only when I say that all the instruments, other than the intra-uterine stem, devised for the correction of these errors of position, have failed to amend the fault; and, judging from the number of cases that have come into my hands from other physicians—some of them experts—I have not been solitary in my failures.

The causes of these failures are purely mechanical. There are no means, aside from intra-uterine support, that act so directly in restoring the displaced organ. The cause of this indirect action is the anterior vaginal wall intervening between the means of support and the part to be supported; a vaginal wall, moreover, that participates in the displacement, and is a part of the error. It is this changed relation of the vagina, and the want of a fixed point of support anteriorly, which render the forward displacements so much more difficult to deal with than the backward; the inner surface of the pubes is available as a point of intra-vaginal support in the latter, while in the former this point is directly under the part to be sustained, without any point of counter-force. These are the main difficulties in the way of simply intra-vaginal mechanical treatment.

I shall refer briefly to those instruments which exert their sustaining force from a point external to the vagina. In order to illustrate this order of mechanical support, I shall select one, the type of all others not intra-uterine, and ideally the most perfect—Cutter's anteversion pessary, with Dr. Thomas's modification. In order to understand what this pessary really does when properly adjusted, let us examine the position of the anterior vaginal wall as implicated in the displacement. Anteriorly and below, the vagina has an unyielding point of origin in its osseous attachments; above, it is subject to the varying positions of the uterus. In forward displacements, particularly of extreme degree, the anterior vaginal wall passes obliquely upward and backward across the vaginal vault to its insertion in the cervix, stretching it more and more as the cervix is forced backward and upward; so that, in the extreme limit of malposition, the finger may detect the tension of the vagina and the nearly obliterated condition of the anterior transverse plicæ. Whatever the amount of deviation of the organ, the difference in effect upon the vaginal column is simply that of degree in tension. Now, the transverse bar of the pessary, impinging upon this tense anterior wall of the vagina, is supposed to lift the fundus of the uterus; but it can only do so as it indents and uplifts the vaginal wall. This indentation cannot occur except by drawing the cervix toward the pubes. It is evident that all force which draws the cervix forward, without lifting the fundus to a corresponding degree, converts a version into a flexion, and, where the latter already exists, simply aggravates the deformity. The effect of the instrument upon the cervix is always in excess of its effect upon the depressed fundus. The operation of this pessary is complicated by another condition. By the altered position of the anterior vaginal wall, the lifting force of the instrument is deflected backward behind the point of available lifting force under the fundus. Its force is therefore expended, not under the depressed summit of the organ, but at the junction of the uterine body with the uterine neck. Any one can satisfy himself of the truth of this by examining the position of the transverse bar of the pessary after it has been worn for a few hours. What is really accomplished by the instrument is this: The cervix is drawn forward, and the entire uterus lifted in the pelvic space. It often relieves symptoms, not by the correction of the deformity, but by lifting the organ entire, its relative position of displacement remaining unchanged.

Hewitt's anteflexion pessary in extreme cases cannot be worn. The tense vaginal roof forces the anterior portion of the instrument downward from its point of support upon the pubes, and tends to partially expel the lower part of the instrument.

The intra-uterine stem with extra-vaginal support I shall not consider. Gynecic surgery has passed beyond such crude ideas. Notwithstanding the great name of Simpson and the ingenuity of Valleix, these instruments have been driven out of use by the general good sense of the profession. They violate every law of normal uterine movement, the complicated and important character of which I have already demonstrated.[1]

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[1] "A Study of the Normal Movements of the Unimpregnated Uterus," this JOURNAL for April, 1875.

It is, in brief, a method of impalement reduced to its possible minimum of danger to life.

In this criticism of some very popular instrumental appliances for the correction of anteflexion or version of the uterus, I speak from my own experience only, by which I feel myself justified in saying that I believe that the only road to certainty in the treatment of these deformities lies in the direction of greater perfection in intra-uterine stem-instruments with adjustable intra-vaginal support. But I do not wish the reader to draw the possibly too natural inference that the instruments figured in this paper avoid all the objections raised against the instruments named; but rather to show that we have many reasons to seek for improvements in the mechanical treatment of these deformities, and that we are yet far from the goal of a perfect pessary.

An instrument designed to correct the forward displacements must undergo a peculiar modification. This requires a vaginal attachment, so constructed as to bring the posterior vaginal wall into play as the point of counter-pressure to the force of anterior displacement.

An instrument of this character has been devised by Dr. Eklund, of Stockholm.[1] The reader can gain a good idea of this stem by imagining the flange, Fig. 3, to be rigidly fixed to the stem, Fig. 1. It is a broad expansion of the stem, its surface parallel with the axis of the stem. This pessary is used in either ante- or retroflexion or version, and the vaginal expansion is not designed to bring the posterior wall into action as a point of pressure, but to offer a broad surface to a tamping of cotton, which is placed in front of the flange in posterior displacements, thus crowding it backward against the posterior wall of the passage, and lifting the fundus accordingly; or, in the opposite form of dislocation, the cotton is placed posterior to the flange, thus pushing it forward against the bladder. So long as the cotton tamping is in place, of course the instrument answers its purpose; but those of us who have tried it know how difficult it is to keep a mass of cotton in one position in the vagina, especially any mass designed to be kept in the anterior *cul-de-sac*. An instrument of this kind, with cotton tamping, is unnecessary in the treatment of retroflexions or versions. Accepting Dr. Eklund's pessary as the basis, I designed the flange figured in cut 3, and which expresses its average size. Its introduction is an easy matter. This stem, Fig. 1, is first placed in position, and the flange is then pushed up upon the wire until it rests against the shoulder *a* of the stem; the same manipulation as in the introduction of my retroflexion stem-pessary, now some time before the public.[1]

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[1] *Obstetrical Journal of Great Britain and Ireland*, vol. ii., p. 561.

This pessary is intended for the correction of forward displacements, and its principle of action is very simple. The portion *b* of the flange, a smooth and rounded surface, is pressed backward by the tendency of the uterus to anterior displacement against the posterior vaginal wall; the fundus is, therefore, maintained in an erect position. These instruments are made of hard rubber.

I can better illustrate the treatment of anteflexion of the uterus by the history of three cases:

Case I.—Mrs. B., a spare brunette, aged thirty-one years; married; no children; two miscarriages, the last six years ago; occupied in the care of her house. The leading symptom in this case was ceaseless and tormenting vesical tenesmus, and which has been present nearly five years. She has been under the care of various physicians, and among them was a general practitioner with gynæcological proclivities, of considerable skill and experience, and who treated her locally, but without benefit. The last was an irregular German physician, who informed her that the urinary symptom was a sign of the last stage of syphilis. This information, with her bilious, gloomy temperament, produced a most unhappy mental condition, which, in connection with the domestic trouble that resulted, drove her nearly to the verge of insanity. During this period of mental excitement the vesical tenesmus was aggravated, often driving her from her bed two and three times an hour during the night. There was never at any time much leucorrhœa, and menstruation was normal, or but little deranged. Inspection showed the urinary meatus tumefied and inflamed, with slight eversion of the edges. On examination, the uterus was found in a complete state of anteflexion. It could be easily carried back into place by the sound; but on the withdrawal of the instrument quickly recoiled to its dislocated position. I at once expressed the opinion that the vesical irritation was due to the anteflexion; but, as the urethra had a suspicious appearance, I thought best to eliminate all other probable sources of the symptoms by a careful exploration of the urethra and bladder. With this in view, assisted by Dr. Frank H. Butler, of this city, who gave the anæsthetic, on the 24th of April, 1875, the urethra was rapidly dilated by the finger, so as to permit the index-finger to be swept round the neck of the bladder just beyond its urethral contraction, but without detecting any diseased condition. A small bivalve anal speculum was then introduced, and through its slightly-expanded blades a fair view could be had of the lining of the urethra, which appeared congested and thickened. Aside from this, nothing abnormal appeared. As this condition may have been the source of the vesical symptoms, I thought it better to treat it. By means of cotton wound upon a probe I applied chemically pure nitric acid to the entire extent of the urethra. The treatment, however, amounted to nothing, in a curative sense, but was well borne, and was unattended by incontinence of urine. Two weeks after the above date the stem represented in Fig. 1 was introduced, and secured in position by the flange, Fig. 3. The instrument was well borne, and the night following its introduction my patient was obliged to rise to void urine but twice, instead of as often every hour. The pessary was worn nearly constantly until

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[1] *Buffalo Medical and Surgical Journal*, April, 1874; and *Southern Medical Record*, November, 1874.

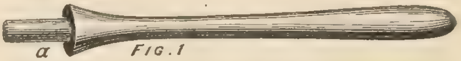


FIG. 1

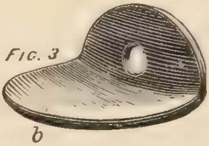


FIG. 3

October, with complete relief of the symptoms. In that month Mrs. B. left Syracuse for Chicago, where, upon going to a physician to have the stem replaced, she was surprised to learn of the fearful risk she had been exposed to by wearing such a dangerous instrument. As she could not have the pessary introduced, she concluded, if possible, to do without it. I saw Mrs. B. in January last, and she informed me that she was free from her vesical tenesmus, and had been so without interruption since October. She declined an examination, as she believed herself to be well.

Case II.—Mrs. W., aged forty-three years; has been a widow two years; three children, the youngest six years old; occupation tailoress. In this case the morbid action of the uterine displacement seemed to expend its force upon the nervous system. There were an endless variety of subjective sensations, and a morbid craving for sympathy. Much of her time was passed upon a couch, or in bed. An examination proved that the uterus was in an extreme degree of anteversion. The os was forced backward and upward to such an extent that it was reached with difficulty by the finger. As usual, in version, it did not recoil so quickly to its faulty position after being replaced by the sound as in flexion. An effort was made to correct the version by means of the flange, Fig. 3; but it was found that, on account of the great capacity of the vagina and the strong tendency to version, the organ settled forward gradually, driving the flange upward and backward into the posterior vaginal *cul-de-sac.* An effort was made to correct this fault in the flange by making its flat vertical surface broader in the direction of *b*, Fig. 3. But this was found to bring its lower edge too near the ostium vaginæ, resting nearly upon the perineal body, so that it was being constantly expelled. Of course, while in place it kept the uterus in its correct position; nevertheless it was not practical. Being somewhat discouraged by my failure, it was some time before I made another attempt. The next effort was to devise a flange which would secure a larger posterior vaginal surface for it to rest against; a counterpoise, as it were, to the strong tendency to anteversion. There remained but one way in which this could be done; and that was, to enlarge the flange laterally in the direction of *b*, Fig. 4. In order to render its introduction easy, a slot was cut upon opposite sides of the

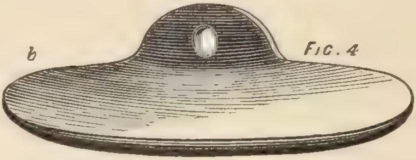


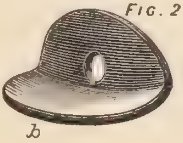
FIG. 4

opening for the stem, which is not shown in the cut. These slots permitted the flange to be turned very obliquely upon the wire which carried the stem, so that it might be presented by its edge at the ostium vaginæ. Fig. 4 represents the actual size, and by means of the slots it was not more difficult of insertion than the flange, Fig. 3; and, as may be seen by a comparison with that cut, in its transverse diameter it is no larger. Taking into consideration the great capacity of the vagina, and the extreme degree and force of the version, the instrument worked remarkably well. It very seldom was expelled or got out of adjustment. Mrs. W. gradually improved in general health, spent less and less of her time in bed, and showed more of her former spirit of industry, although her mental tone revealed the severe shock to which it had been exposed. It now appears, at this writing (April 10th), that, while the prospect of a "cure" for Mrs. W. is very remote, she is still wearing her instrument with comfort most of the time, and is earning her living as a tailoress, which she had been unable to do for two years previous to the treatment.

CASE III.—Mrs. S., aged thirty-four years; has been married eighteen months; no children; previous to her marriage had taught school many years; since her marriage her occupation is that of a farmer's wife. In *physique* she is a tall, colorless blonde. Mrs. S. was brought to me by her family physician, Dr. S. M. Higgins of Memphis, N. Y. It is needless for the purpose for which her case is cited here to detail the symptoms; they were of such a nature as led her physician, an energetic and accomplished medical man, to arrive at their origin by an examination of the pelvic organs. On examining for myself I found a discouraging state of things.

The vaginal cavity was very much contracted, but normally so, the uterus low, the cervix slightly elongated and conical, the finger meeting it about an inch and a half from the ostium vaginæ, and the uterus was sharply anteflexed, the seat of the flexure being at the junction of the uterine body with the uterine neck. The flexed organ possessed great resilience. From its small size and the general condition of the parts, I was induced to believe that the flexion was either congenital, or dated from early menstrual life. It was an excellent case for division of the cervix anteriorly; but to any thing in the nature of a surgical operation the patient or her husband would not listen. The first difficulty that presented itself in the way of a mechanical correction of the deformity was the shortness of the vagina, which prevented elevation of the organ so as to admit the smallest flange in my possession. A flange the size of Fig. 3, when in position, presented its lower edge just within the labia, and caused so much pain that I at once removed it. It was evident that I would have to construct a vaginal attachment smaller than any I had ever yet devised; and at the same time with a surface sufficiently large to secure a due amount of counter-force by pressure against the posterior vaginal wall. From a wax model Dr. A. J. Dallas, Jr., a dentist, constructed out of hard rubber the flange represented in Fig. 2, and which is slightly larger than the original. This instrument was introduced without difficulty and was worn with comfort. Unfortunately I can only allude to this case as one in which many obstacles in the way of mechanically treating a severe form of anteflexion were overcome by a simple device, and as one eminently calculated to illustrate the purpose of this paper. Mrs. S. in February last, after a severe day's work about her house, was suddenly attacked by some form of cerebral disease, and, becoming rapidly unconscious, she died in about twenty-four

FIG. 2



hours. No *post-mortem* examination was allowed. She had completed menstruation—still wearing the stem—about ten days previously to her fatal sickness, the function being performed with less general disturbance to the system than usual.

The point in the mechanical treatment of anteversions or flexion, or, in fact, the opposite form of uterine dislocations, which these cases are designed to illustrate, is that we cannot place our reliance upon any one form of instrument. The simple difference in size, which constitutes the variety in any one form of pessary, is not sufficient to meet the requirements of particular cases. It is safe to say that no two vaginæ are alike, and the extent to which they differ in capacity is but a minor difference. If we were to fail in correcting a flexion with one size of pessary for sale by the makers, it would not follow that the size larger or smaller, as the case might be, should succeed where the other failed; but we ought rather to consider that the case may be one that demands some other form of mechanical correction. Contrast the two Cases II. and III., and the reader will perceive at once that a simple difference in size in the form of flange I usually employed (Fig. 3), would not enable a physician to treat either of these cases. In order to apply the same principle to the treatment of the three cases, it was necessary to essentially modify it in the management of the last two. Now, the usual method is too mechanical. A physician, if he relies upon the instrument-makers, has only a choice of a difference in size in any one instrument he may select. The more complicated the instrument the greater the reason, oftentimes, for changes in form other than that of size. In using Dr. Thomas's anteversion pessary, as sold by the makers, I have several times been obliged to shorten the bow; this may not be the fault of the idea of the instrument, but rather of the maker, for my own brief experience teaches me that a pessary is one thing after it comes from the hands of the inventor, and another thing coming from the hands of the maker. The gynæcologist is not altogether blameless in the matter. If he possesses any ingenuity at all, he invents an instrument, usually a pessary; and, because it succeeds well in one case, he places it at once in the hands of an instrument-maker, who advertises it accordingly as an instrument designed to correct a certain form of uterine dislocation, and both the inventor and the maker seem to believe that by producing two or three sizes they are providing for every probable variation of condition in any case. We have a class of gynæcologists, both in this country and in England, who seem to devote a large amount of their time to mechanical inventions, if we are entitled to judge by the fact that they rarely come before the professional public except in connection with some new gynecic device. I cannot avoid the belief that this multiplicity of instruments is working harm, rather than good, to the cause of special medicine or surgery, as it is constantly leading to disappointment on the part of the general practitioner, who is obliged oftentimes to rely upon himself, and thus causing a distrust of those who profess special training in one department. It may be objected that the surgeon cannot be constantly inventing modifications or new appliances for his clients; but, if he is to treat cases of this nature successfully, he must be an inventor, not once, but all the time. Nor is it so much a matter of pure invention as may be supposed. It is the case before one, and not one's originality, that suggests the new instrument or the modification of the old one. The surgeon has but to receive the hint and act upon it.

A very convenient way for physicians who cannot take their orders personally to the special manufacturer of these instruments is, to establish relations with some dentist who makes rubber dental plates, and is therefore able to make small vulcanite instruments, such as are figured in this article. From a careful study of his case, the physician may prepare a model in wax which the dentist can easily copy in hard rubber. In this way changes in form and size may be made until the particular case under observation is fitted with its proper form of instrument. This method of procuring ante- or retroflexion instruments may be more costly than ordering through the regular channels of the trade, but the certainty of perfectly adapting the mechanical treatment to the particular requirements of the case counterbalances the increased expense. In the slighter forms of version, the block-tin rings or copper-wire rings covered with pure gum, which may be procured in a great variety of sizes, can be bent or moulded into any form the case may require. I am satisfied that the stem-pessary ought to be made specially for each case. I do not believe that they can be manufactured for the trade in three or more sizes and give satisfaction. Success depends upon the flange being accurately fitted, and, if the physician does not succeed in his first model, further trial is sure to reward him with a perfect flange.

ART. II.—*On the Treatment of Ovarian Tumors by Electrolysis.* By FREDERICK SEMELEDER, M. D., late lecturer in the University of Vienna.

IN the last number of the *Wiener medizinische Presse* of 1875, I published a short pamphlet on the cure of ovarian cysts by electrolysis. Since then several American and English papers have given short extracts from it; the French and German papers have only to a very limited extent been accessible to me, and so I am not able to say whether they thought proper to take notice of my memoir. The title of my essay, "No more Ovariotomy," I am free to admit, sounded rather bold and extravagant. I shall now give, however, not a mere translation, but a revised and enlarged edition of my pamphlet, which, I hope, has not yet lost its substantial interest.

Before entering into the subject itself, I must try to dispose at once of the question of priority, a matter in which I do not wish to be involved again, as it happened to me at the beginning of my scientific career, when laryngoscopy sprang into life. I wish to state here again that I do not pretend to pass for the inventor of the treatment of ovarian cysts by electrolysis; what I claim will soon be seen.

Various treatises on electro-therapeutics that I have been able to examine, devote a few lines to electrolysis and electro-katalysis, recommending that treatment for tumors of different classes, even cancerous ones, collections of serous fluids, especially hydrocele, hydatids (echinococcus), varices aneurisma, stricture, exudation, and ulcers, etc., and some of them make special mention of ovarian cysts. But they do not write from personal observation or actual experience. What they give looks rather like a proposition without any support or confirmation, as it seems nobody had practically tried it, or had obtained any encouraging results, and, in fact, the profession in this country only knew the new method by hearsay, mostly through my pamphlet above alluded to, and did not seem to put much faith in the innovation. Only lately, while in New York, the new edition of Benedikt's "Nervenpathologie und Elektrotherapie" (Leipsic, 1874) fell into my hands, and I learned by an additional remark that Fromhold, in a book published in 1874, in Pesth, reported two cases of ovarian tumors successfully treated by electrolysis; and only since my arrival in New York have I known that Dr. E. Cutter, of Cambridge, Mass., claimed to have successfully applied electrolysis to a certain number of fibroid tumors of the uterus (*Boston Medical and Surgical Journal*, February, 1876).

It was two years ago that I first heard of a case of ovarian cyst cured by electrolysis. A young lady friend of mine had gone to Dresden to seek for her trouble that relief which she could not obtain in Vienna. This bewildered me a little. I learned afterward from Dr. Hesser, of Vienna (May 28, 1874), that the disease in question had been an ovarian cyst, and that the cure had been effected by acupuncture. No more information could be obtained from Dr. Hesser. But that was enough to suggest to me the importance of the fact, and I at once determined to try that remedy in the first case that should come under my care. I wrote at the same time to my learned friend Dr. Fred. Fieber, in Vienna, who had treated the above-mentioned lady up to her complete recovery after she had returned from Dresden in a highly-improved state of health. In June last year (1875), I received from Dr. Fieber a pamphlet published in the *Wiener Allgemeine medizinische Zeitung*, 1874, "Mittheilungen über 16,000 Fälle von Nerven, Brust und Kehlkopf Krankheiten," etc., where, on page 19, are mentioned two cases of ovarian cyst cured by electrolysis (in my memoir in German I wrote, by mistake, "one case"). These two cases seemed to me too interesting and too important to be published in such a way, hidden in a corner behind sixteen thousand cases of diseases of the nerves, of the chest and throat (the sign of exclamation in the German edition was not in my manuscript), and, indeed, they had been so admirably concealed that they completely escaped observation. On July 3, 1875, I had a very polite letter from Dr. Fieber, in answer to mine, with some remarks on his application of electrolysis, his experience, etc. In the mean time, however, the long-looked-for opportunity had come to try the new method.

Case I.—On the 23d of April a young lady was sent to me from Puebla, with an ovarian cyst. The patient was eighteen years old; for several years past she had noticed a swelling of the abdomen, which began in the lower part, on the left side, and had increased gradually. Latterly the increase had been rapid. The menstruation had begun very early (cases of girls menstruating at eleven years are frequent in Mexico), and had been regular for a short time only. Then intermission of several months had been alternating with violent hæmorrhages. My patient complained of pains in her back, a dragging sensation in her left leg, and all the symptoms naturally occasioned by a large tumor in the abdomen. The natural excretions were not particularly disturbed; there was no œdema of the lower limbs. When the treatment began, 29th of April, the lower part of the abdomen was occupied by a tumor extending a little more to the left side than to the right, and reaching three centimetres above the navel. The percussion over the whole tumor gave a dull sound; the tumor had apparently thin walls, but it was very tense, and fluctuation consequently not very observable. The greatest circumference, two inches below the navel, was ninety-six centimetres; the sexual organs in a virginal state. The treatment continued nearly daily, even during the time of menstruation. On the 26th of July, when the patient left the city of Mexico, the abdomen measured, in the same line as above, ninety-two centimetres. The treatment was continued in Puebla, and over two months more were required to make the cure complete.

Case II.—On the 20th of May, 1875, a young lady came to see me; she was twenty-four years old, married, had two children, and had for two years past observed a tumor in the left side of her abdomen. The tumor grew slowly, and had reached the size of the head of a child of ten years. It was quite soft. At the beginning of the year several physicians of the capital had seen her. The diagnosis of an ovarian cyst had been established, and ovariotomy was proposed. But the young lady and her family could not make up their minds to it. On hearing that I had undertaken the treatment of a similar case without operation, she came to know my opinion. The treatment began on the 27th of May, and on the 5th of July she was perfectly well and returned to her home. The cyst had been reduced to the size of an orange and was quite solid.

Case III.—In the beginning of June, 1875, a woman forty years of age came under my treatment, with a cystic tumor of the left ovary. The patient had never been pregnant; her menstruation had been regular, and she had nothing to complain of. The tumor extended on the right side to the navel, and a hand's width over the median line; the left side of the abdomen was nearly all filled by the tumor, which extended upward to the ribs. The tumor was divided by an oblique furrow into two parts, one inferior and the other external and superior, and was quite soft. It was not possible to ascertain how rapid the development of the tumor had been, or how long it might have existed. After a daily treatment of six weeks the tumor was so much reduced that it seemed unnecessary to continue it.

So much for my first communication. Since then another patient was cured, after eight weeks' treatment. She was thirty-eight years old, married, had never been pregnant, and never noticed any irregularity of menstruation; for some time past she had been growing very stout; for some trouble of the digestive and urinary organs (constipation, flatulence, frequent micturition), she happened to be examined more carefully by her physician, and a fluctuating, soft tumor, with thin walls, was detected, occupying the left side of the lower abdomen, extending to midway between the median line to the anterior superior spinous process of the ilium and upward two fingers distant from the umbilicus. The treatment offered no remarkable incident. When the cure was complete the cyst was likewise reduced to a small solid mass, which, without previous data, would hardly have been recognized as being the remains of an ovarian cyst.

When I left Mexico, I placed under the care of my distinguished friend Dr. Schmidtlein three patients. I have not been notified since of their condition, but in two of them sufficient improvement had already taken place to make their cases interesting.

Case IV.—A lady came to me toward the end of November last. She was twenty-eight years old, married, had five children; never experienced any trouble or considered herself sick. Since her last confinement, a year and a half ago, she had noticed that her abdomen remained extraordinarily enlarged, and finally detected a tumor. She had heard of similar cases successfully treated by electricity, and when I saw her her general health was satisfactory. Yet she noticed that of late some emaciation had taken place, and she was unusually pale. The left side, principally, of the abdomen, was occupied by a very soft, fluctuating tumor, with apparently very thin walls, extending three inches beyond the median line, to the right, and one inch above the navel, while on the left side it extended still a little higher. On pressure, three hard masses could be discovered in the tumor, two small ones in the lower part close to the posterior wall, and one, of the size of a small orange, close above the left side of the navel. Treatment was begun at once, and continued until my departure (15th of February), being suspended only during the time of menstruation, for five days per month. When I left Mexico the liquid had been resorbed so far that the upper limit of the tumor was at the level of the umbilicus; the hard lumps had apparently undergone no change, except that the larger one had become quite free, so that it could be brought downward and to both sides more than a hand's width; it was hard, like cartilage, and presented a completely smooth surface. I believe there is every reason to suppose that the liquid will continue to be resorbed, and it will be interesting to know what will become of the hard lumps.

Case V.—In October I was called to see a lady fifty-two years of age. She was very young when she first menstruated.

Menstruation had been pretty regular, and rather profuse, for many years. Sexual intercourse has always been unpleasant to her, and she only submitted to it because she thought it was her duty. She had always been barren. For more than twenty-three years she had suffered from various complaints which were considered hysterical; she complained of constipation, frequent micturition, heaviness, dragging pains in the back and legs, principally during menstruation or when walking or kneeling down; her stomach grew larger, but very slowly. Two years ago, when she had once more changed her medical attendant, she was examined (because some liver-complaint was then suspected), and was found to have a large, heavy, hard tumor in her stomach. The tumor was pronounced to be ovarian, and she was cautioned not to have it operated on. Hearing that I had cured ovarian tumors without operation, she sent for me. I found a tumor on the right side, and extending more than one inch above the umbilicus, and still higher on the side, protruding considerably, giving the abdomen an unsymmetrical shape. It could not be moved upward or downward, but lateral movement was possible. The tumor was uneven on its surface, of the consistency of cartilage; in three places distinctly fluctuating parts were distinguishable, two smaller ones on the right side, and a larger one, apparently seven to eight inches long and half as wide, on the left side, its longitudinal direction being parallel to the median line. The tumor was tender to the touch, principally around the prominent navel, and at the menstrual period; the abdominal wall very thin, as the patient was generally fleshless; no œdema of the lower limbs; abdominal veins not enlarged. An examination through the vagina proved a failure. The womb was moved together with the tumor, but the uterine sound could not be used; the cervix was very thin, soft, and elongated, and formed an angular curvature with the body of the uterus, its orifice being directed toward the rectum; general state of health good. Weighing all these circumstances, I considered the tumor a uterine fibroma, with cysts. I declared to the patient that I had never applied electricity to such a case, and that I did not consider hers a favorable one for that method; still, if she liked, and only as an interesting experiment for both of us, I would try it. She consented. Treatment was begun at once, and interrupted one week out of every four during the catemenial period. In January the liquid contents of all the cysts had disappeared, and the tumor was consequently reduced in size. The treatment continued all the same, and, when I left, both my patient and myself were under the impression that the tumor continued decreasing, though slowly.

Case VI.—Toward the end of November a lady applied to me for advice. She was forty-five years old, had had a child some twenty-four years before; never was pregnant again; had suffered from certain hysterical symptoms; the catamenia had been pretty regular, only lately had taken the character of metrorrhagia, coming too often, lasting too long, and being too abundant. She had felt swelling and pain in the breast, and nausea when getting up in the morning; general state of health very good. On examining her stomach her physician found out that she had a tumor on the left side of the abdomen, quite low down in the pelvis, of the size of a cocoanut, perhaps a little larger; the tumor caused pain when pressed, did not adhere to the womb, seemed to press little on the crural nerve and artery, was dense but not hard, and gave to the hand a feeling of obscure fluctuation. It gave me the impression of a cyst with thick walls and thickish contents; in fact, it was not possible to make a positive diagnosis, and I would have preferred to leave that tumor alone until some other symptoms developed, but the lady felt quite uneasy and nervous, since she knew that something was wrong with her, and insisted on having treatment. I applied electricity, as in the other cases, but when I left Mexico I was not able to notice any effect.

I have, perhaps, been a little prolix; all these particulars may not be as interesting to your readers as they seem to me, but I think it was necessary to give these facts, to make more intelligible what I have still to say. In all my cases I was never obliged to stop treatment for any unfavorable incident, nor did I hear of any relapse.

Whenever two needles connected with the poles of a battery are introduced into a solution of salts, into any liquid that contains albumen, into a blood-vessel, into a tumor filled with a liquid, or into any animal tissue, a decomposition takes place. At the positive pole oxygen is eliminated, acids are formed, albumen and fibrine collect, coagulation occurs; the parts in the vicinity are rendered tough and hard, and at last gangrene occurs; while hydrogen, watery extracts, alkaline bases, iron, coloring-matters, go to the negative pole, where also ammonia and hydro-sulphuric acid are developed, the surrounding parts are shrunken, and in the last degree sphacelus supervenes. All substances which contain water are good *electrolytes*, i. e., are liable to be decomposed by electricity, and the quantity of water and soluble salts they contain gauges their conductility and capacity for electric decomposition.

The same process may be effected by introducing but one pole into the liquid, and closing the circuit by placing the other pole on the surface of the body, whereby different indications may be fulfilled, according to the quality of the pole introduced. Nay, even when neither of the poles is introduced, but both are applied to the surface of the body, electrolytic effects may be obtained, provided the parts between the two poles be tolerably good conductors of the current; that is the "percutan method." I believe that under electrolysis in the ovarian cyst something must take place like that which results in an albuminous fluid by the introduction of both poles. Not only is the liquid resorbed, but the very wall of the cyst undergoes such a change that further secretion of liquid is brought to a standstill; and here it is proper to state that this must be due to an alteration of the liquid itself, as only a comparatively small part of the wall of the cyst comes in contact with the poles. A *post-mortem* examination of a cyst cured by electrolysis would be of the greatest interest; happily no opportunity for one has occurred so far.

Electrolysis is always a slow process, and when performed in the manner first described, by introducing both poles and the application of a strong current, it is a very painful method as well; so much so that it is always performed under chloroform, the narcosis being rendered more thorough and lasting by hypodermic injection of morphia. That is the way in which Dr. E. Cutter applies electrolysis in fibroid tumors of the uterus. Benedikt says plainly that any patient will prefer to be operated upon with the knife.

For my purposes I always use mild currents, and so does Dr. F. Fieber. Neither his patients nor mine have ever experienced any inconvenience worthy of notice; they have not been put under chloroform or confined to bed. I always tried to avoid galvano-caustic effects, though I did not invariably succeed. I have used carbon and zinc batteries, and copper and zinc batteries, and have in all my cases applied the constant current. Dr. Fromhold, in Pesth, has cured an ovarian tumor by the faradaic current.

In Cases I., II., III., IV., V., I introduced both needles sometimes, but generally only one; the applications were made daily, and lasted from five to ten minutes.

In Case I., they were not even suspended during menstruation. Dr. Fieber uses acupuncture one day and percutan faradaism the next. In the sixth case I never introduced a needle, for fear of hæmorrhage, and because of the hardness of the tumor; but now I believe it might be done without much risk, as the coagulating effect of the current itself may be sufficient to stop bleeding. I applied both electrodes on the skin of the abdomen; but generally one electrode was introduced in the vagina and carried to the cervix uteri, while the other electrode was applied externally to the skin of the abdomen. In Case VII. I ran a needle several times into the tumor, but afterward, as the nature of the tumor was so very obscure and it was so low down in the pelvis, I limited myself to percutan application. It is still questionable, and to be determined by further experience, which battery, and the introduction of which pole, in a particular case will give the best results, as well as which class of tumors is most favorable for electrolytic treatment.

When I began the treatment of my first case I felt somewhat doubtful about its success, and bearing in mind that some day we might be obliged to resort to ovariotomy, I asked myself whether electrolysis would not produce adhesion, and consequently be prejudicial in case ovariotomy should be required. I tried to keep my punctures close together, so as to produce only limited adhesions, if any; but when I saw that no inflammatory reaction followed, and when necessity compelled me, I extended my punctures freely all over the tumor; and I am able to state that electrolysis produces no adhesions, and may be safely tried, because, if a patient were not relieved, she would not find herself in a less favorable condition for ovariotomy. It has been objected that polycysts would not be successfully treated by electrolysis; but I do not see the difficulty. Dr. Fieber proposes, in such a case, to thrust the needles through as many cysts as possible. It has likewise been said that dermoid cysts might not be fair objects for the method. I do not wish to discuss how far Case V. may be considered a dermoid cyst; but the question can only be solved by experiment, and, as the experiment is harmless, it will be made as soon as an opportunity presents itself; the advantage of safety with electrolysis will repay for the loss of a couple of weeks.

I feel quite sure that adhesions, spontaneous or after previous tapping, constitute no contraindication to electrolysis.

Up to the present time no relapse has been noticed, and I believe that any such case might be explained by the supposition that, when the electrolytic cure was effected, some small cyst was already in progress of development, and had escaped the needles. The number of cases is not yet large enough to have completely exhausted all the resources of the new method. It is yet to be seen with what other methods (tapping, injection, etc.) electrolysis might advantageously be combined, and under what circumstances. Dr. Fieber proposes, in cases of very large cysts, to perform puncture and let out a quantity of liquid; and I am of his opinion.

In cases of uterine fibroma I suggest, as a modification of Dr. Cutter's method of proceeding, to apply mild, constant currents, for a couple of hours or more every day, by the introduction of one pole into the womb (if possible), or to the cervix uteri, and the other into the tumor; and even percutan electrolysis might be tried, before any painful application is resorted to. It may, perhaps, take more time, but, as such a treatment causes no pain nor serious inconvenience, and carries with it no danger, it might be tried.

After all I have said, does it still seem so Utopian that I should hope to abolish ovariotomy? Dr. Peaslee, in his most valuable work on ovarian tumors, page 60, says: "Of all forms of ovarian tumors, the fibroma constitutes decidedly less than one per cent., and may be stated at one-half per cent.; the true monocyst constituted three per cent. in Dr. Keith's cases; the dermoid cyst may be estimated as one and a half to two per cent.; the oligocyst at thirty-eight per cent., and the polycyst at fifty-seven; carcinoma being about as frequent as fibroma."

Carcinoma may be left out of the question as far as any curative proceeding is concerned; fibroma of the ovary may be considered just as curable by electrolysis as uterine fibroma is; and even if we believe successful treatment by electrolysis of dermoid cysts doubtful, there remain, at all events, the oligocysts and polycysts, or ninety-five per cent. of ovarian tumors, as offering a fair chance for cure by electrolysis. If any of my cases may be claimed as having been dermoid cysts, the proportion is still more astonishing, and my title of "No more Ovariotomy" may not sound so startling as at first.

Art. III.—*A Professional Retrospect.* By J. F. Todd, M.D., Galva, Illinois.[1]

The incoming of this centennial year of our national existence suggested the subject of a paper which your votes kindly commissioned me to present. As citizens of the commonwealth we can pardonably indulge in self-gratulation as we recall the fact that, during the past hundred years, the embryo Government, with its thirteen States and a population of three millions, has expanded and developed into a colossal power sustained by a population of forty millions of free citizens. Perhaps no pursuit, unless it be that of the political philosopher, grants better facilities for accurately observing the material and intellectual development of a people, than that which it is our duty to cultivate as professional men. We are not called upon to take active parts in political contests, or to devote special attention to the study of political economy; but we are constantly meeting the people at their homes, and insensibly acquiring an intimate acquaintance with their habits of thought and their surroundings, and, whether we will or not, exercising the right of friendly espionage. These pleasant and intimate relations have revealed facts which to the older members of this association foretold the erection of schoolhouses and colleges, of churches and factories; and they supplied the lens through which was foreseen the locomotive and its ponderous train bearing its burdens of wealth over the beautiful prairies of our Garden State. But, better and grander than all has been the realization of the hopes such relations inspired in the wonderful intellectual activity which characterizes the present age. To thoughtful minds this represents the glory of our national progress, and the pledge of our political safety. It promises a strong and luxuriant growth of knowledge, which shall expose the ignorant pretensions and thwart the selfish designs of the enemies of law, science, and morality. As members of a profession dealing with the most important interests of the people, acting severally as conservators of the public health, we are admonished to preserve whatever of value may have been collected in the past, and with it garner all that well-directed and assiduous labor can secure in the future. If we fail to respect this just demand, our profession falls into merited contempt; if we obey it with the alacrity and fidelity due to its dignity and authority, we can do for medical science in America what America has done for humanity and commerce in the world. With one more century of honest work we can complete the second royal volume in the medical science series, which, let us hope may continue to receive valuable additions to the end of time. Medicine and the medical profession have no mean history in America. A practical illustration of professional zeal and professional loyalty antedated the historic incident in Boston Harbor. Dr. William Shippen and Dr. John Morgan, both native Americans, first conceived the plan for the establishment of a medical school in this country.

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[1] Read before the Military Tract Medical Society, at Galesburg, Illinois, January 11, 1876.

In 1765, Dr. Morgan submitted to the trustees of the College of Philadelphia a plan for the institution of medical professorships. The plan was adopted, and Dr. Morgan was appointed to the chair of the Theory and Practice of Physic. In the same year Dr. Shippen was chosen Professor of Anatomy and Surgery. On the 21st of June, 1768, the first medical commencement was held in America, and the degree of Bachelor of Medicine was conferred on ten persons. In the year 1769, when the medical faculty was fully formed, it consisted of but four professors. In 1791 the medical department of the College of Philadelphia was merged into a new institution, bearing the name of the University of Pennsylvania, which, embracing two faculties, necessitated the establishment of six professorships. From that time to the present we can proudly and justly claim that the history of that institution is a fair criterion of the standing of the medical profession in America. The medical *savants* of the world have enrolled in the list of distinguished names those of Rush, Wistar, Physick, Gross, McDowell, Parker, Mott, the lamented Brainerd, of our own State, and a yet larger number, living and dead, who require no mention in these pages to perpetuate their fame. Under the impulse of rapid national development, medical colleges have been established in every important city in the country. The ninth census reports ninety-two medical colleges, having an annual income of $599,612, and 7,362 matriculants; these returns, representing at that time irregular colleges and students of irregular practitioners, it may be fairly assumed, represent about the true statistics for rational medical teaching to-day. The number of physicians in general practice has swollen to over fifty-five thousand. Hospitals have been erected in large numbers, and are generously supported. To fully provide for the necessities of the indigent, insane, and feeble-minded, free dispensaries have been established, enabling the poor to secure the most competent advice free of cost. The medical profession has nobly sustained its time-honored reputation for benevolence, and may point with honest pride, to its history since

1776 as a vindication of its claims to the respect of mankind. An honest retrospect of history can seldom fail to secure valuable results. If it involves a failure to discover ample evidences of healthy progress in science and arts, attested by convincing proof of increased utility, the failure admonishes us to practise greater diligence and industry in whatever pursuit we may be engaged. If careful survey gladdens the heart with tokens of successful labor, how it increases the vigor and sweetens the toil required for more persistent and successful effort! We are content that medical science and the medical profession may claim this privilege, and stand or fall on the result.

The treaty of peace with Great Britain which successfully terminated our struggle for independence was soon followed by a discovery as valuable to mankind as the establishment of a republic in America. The ravages of small-pox had swept the earth with relentless fury at intervals during twenty-nine centuries. Moore, in his history of the disease, states that it existed in China and Japan eleven hundred years before the Christian era. After a long interval it appeared in Arabia and Egypt; the Saracens communicated it to the Crusaders, and through them to all Europe. In 1517 it was imported into St. Domingo, and from there conveyed by a negro into Mexico, where it spread with such desolation that in a short time it destroyed three and a half millions of people. In 1707, it carried off one-fourth of the population of Iceland, and almost depopulated Greenland. It attacked and almost destroyed the aboriginal tribes of Canada. It is stated that, in the middle of the last century, two millions of people perished by it in Russia. In London, in 1723, one out of fourteen deaths resulted from small-pox; while in France, in 1754, ten per cent. of all the deaths were from the same terrible scourge. It respected no station; it defied isolation. In filth, and want, and utter wretchedness, that defy description, it reveled as though conscious of demoniac power, and held high carnival in lordly palaces, prostrating their inmates with its baleful breath. It destroyed Queen Mary of England in 1694, the Emperor of Germany in 1711, the Dauphin and Dauphiness of France in 1712, the Emperor of Russia in 1730, the Queen of Sweden in 1741, Louis XV. of France in 1774. The discovery of the protective power of vaccination, by Dr. Jenner in 1798, we need not say was the greatest boon that science ever conferred upon humanity; his fame is rendered no more secure by the monuments erected to his memory in England and France. Centuries may come and go in their silent march and leave no chronicle, but the traditions of a grateful world cannot fail to preserve the name and revere the memory of Edward Jenner. Perhaps the most important event of the century, so far as it relates to the progress of the medical profession, was the revival of clinical instruction. The most valuable, and, in fact, the only method of teaching in the early history of medical science, fell into desuetude after the foundation of the school at Alexandria; and, according to Renouard, the teachers at that day substituted transcendental hypotheses for the simple results of observation. Clinical lectures at the bedside were begun by Sir Benjamin Brodie in 1813. They now constitute an essential feature of medical teaching. The management of our metropolitan hospitals, appreciating the practical importance of such training, cheerfully sanction the privilege. The discoveries in medical science in the last one hundred years, we can justly claim, have kept pace with the progress of the age, and cannot fail to be accepted as a reliable criterion of the intelligence and industry of the profession. The scope of this paper will only permit brief mention of some of the most important events in the history of medicine and its collateral sciences. Dr. Priestley's discovery of oxygen gas, in 1772, signalized an era in the history of chemistry. Lavoisier soon after introduced a new nomenclature; important discoveries followed in rapid succession, opening up wider fields of research, and contributing largely to the value and certainty of therapeutic art. The atomic theory was elaborated by Dr. Dalton in 1808, and in the same year Sir Humphry Davy announced the discovery of a number of elementary substances which, in their various combinations, have proved to be of incalculable value in the treatment of disease. The discovery of the law of the diffusion of gases, galvanism, voltaic electricity, photography, and the application of science to telegraphy, are among the most valuable contributions which ever have been or ever can be made in the progress of civilization. Chemistry has supplied our materia medica during the century with morphia, quinia, the bromides, iodides, chloroform, chloral, and creosote; a list which, though very incomplete, represents a power and value of the utmost importance. The art of surgery has been cultivated with a degree of ardor which places Vesalius in the rank of honor with his distinguished contemporary, Columbus. A wise and humane conservatism and improved therapeutics have greatly diminished the mortality and the mutilation which result from surgical operations; the invention of the laryngoscope and ophthalmoscope, of recent origin, has proved a valuable aid to the diagnosis and treatment of a large class of obscure affections of the most intractable character; the resection of bones at the joints, the various operations for necrosis and caries of the jaws, the preservation of the periosteum, permitting new development of osseous structure, the improved treatment of aneurisms, the operation of ovariotomy, and the antiseptic treatment of wounds, are all recorded in the achievements of modern surgery, crowning the efforts of that enterprise and genius which rescued a noble and beneficent art from the hands of an ignorant and incompetent organization.

The practical value of professional effort, the rapid advancement of scientific knowledge, the dignity and beneficence of our art, are fully demonstrated in the improved sanitary condition of our cities, the increased longevity of the population, and the rapid general diffusion of the elementary laws of hygiene. Prior to 1802 comparatively little attention was paid to the public health in France, while in England and America the subject was almost completely ignored until about the year 1832. The publication of Tardieu's "Dictionary of Health," Dr. Southwood Smith's "Philosophy of Health," and the organized efforts of the most influential members of the profession were at last successful in exciting public attention, and arousing a degree of interest commensurate with the importance of the subject. The wholesome result of this agitation is apparent in the enactment and enforcement of national, State, and municipal laws for the removal of nuisances, and the appointment of health commissioners invested with sufficient powers to enforce the observance of the law. Our charitable and reformatory institutions, steamships, and railway-cars, are now constructed with reference, in some degree, at least, to the demands of our physiological requirements. The discoveries of Priestley and Prof. Graham are taught in our common schools, and while religious fanaticism is propagating disease-germs in the East, in pilgrimages to Mecca, our children are acquiring the knowledge to instruct us in the rudiments of sanitary science. The agitation of these sanitary questions has secured the most significant results. The general diffusion of knowledge and the practical character of popular scientific inquiry furnish the crucial test of professional merit. Mysterious airs, solemn demeanor, and labored Latinisms, supply poor protection against the aggressive spirit of modern inquiry. It is stated, in the census report of 1860, that in that year one million three hundred and sixty thousand of our population were constantly sick. It has been estimated that from one-half to three-fourths of the population of our cities are sick at some time during any year of ordinary salubrity. It has been stated that the loss to the British Empire which grows out of preventible deaths and sickness amounts to the sum of two hundred and fifty million dollars per annum. These statements comprise but a trifling number of startling facts which professional inquiry has elicited. Public hygiene is to-day the most important question, not only in medical associations, but also in political economy; it receives the attention of the most learned and the most benevolent in every profession in every civilized government on the globe.

The value of the efforts of the profession can be only briefly and imperfectly summarized by presenting statistics of mortality, and contrasting the behavior of contagious and infectious poisons, modified under the influence of applied sanitary science. A recent report of the State Board of Health of Massachusetts to the Legislature announces that the mortality from pulmonary consumption had been reduced twenty per cent. in the last seventeen years. Dr. Bennett, an eminent English authority, speaks of tuberculosis as a very curable disease under proper hygienic and medical treatment. Whether such statements can be indorsed by the profession or not, it may be safely stated that the accumulated experience of the profession is favorable to the view that our treatment, hygienic and therapeutical, as taught and practised to-day, has in some degree reduced the mortality resulting from that very prevalent and terrible disease. The value and importance of sanitary measures were strikingly demonstrated in New Orleans, during the late war, in the immunity from yellow fever for two years, despite the fact that over one hundred thousand unacclimated soldiers were stationed in or passed through the city during that time. No fact can be more clearly established than the value of quarantine and sanitary regulations in checking the extension of Asiatic cholera. The laborious researches of the cholera commission in Constantinople and Weimar; the observations of the profession in this country and Europe; the endemic origin of the disease; the history of its propagation, and the control of its epidemics by disinfectants, and the observance of quarantine and sanitary precautions—all and severally attest the soundness and value of the most advanced views of the medical profession. Since the epidemic of 1832, the subject has been most thoroughly investigated, and its study promoted by every civilized government. It is a significant fact that all the measures and influences required for the protection of health are, at the same time, the most powerful agencies in the advancement of civilization; with the improvement in science and morality, the average duration of life has increased fully thirty per cent. in the last one hundred years. The mortality statistics of public hospitals, in medicine, surgery, and obstetrics, supply the data that secure to our profession a large share of the honor which such results ought to confer. If, then, the medical profession can properly claim to have been one of the factors employed in building up and sustaining the civilization of the century; if our history justifies our adhesion to the principles and practice of rational medicine; if our national association and its code of ethics represent the American medical profession, can we afford, either from carelessness, indifference, or indolence, to permit the growth of the people to overtake us? Every important event reminds us that we live in an age of progress, an age which, in its haste to utilize improvement, often mistakes impudence and innovation for scientific advancement. It is the age for honest effort, which must be succeeded in God's own time by the age of happy rewards. And no time will ever be known to us more auspicious than this in which to forget personal piques, prejudices, and animosities, to renew our pledges of fealty to that noble order of the brotherhood of man, and our humble and devout allegiance to the support of the medical profession.

Clinical Records from Private and Hospital Practice.

I.—*Case of Resection of the Tibia to relieve an Angular Deformity.* By James S. Green, M. D., Elizabeth, N. J.

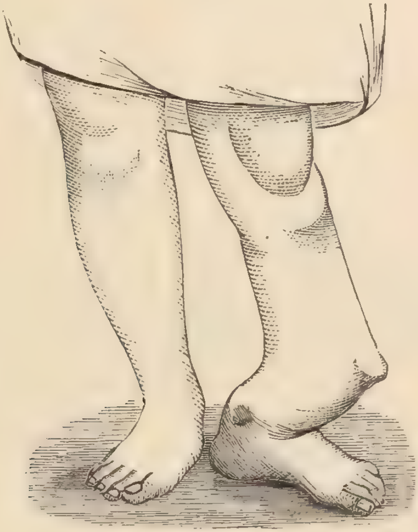
This case presented a most remarkable deformity, as will be observed from the engravings taken of the photographs of the limb. It was also complicated with an ununited fracture of the fibula (the lower end of the upper fragment of which had formed a false joint with the side of the tibia), a contracted tendon of the plantaris muscle, and a congenital talipes calcaneus.

As may be imagined from the above description, this case presented many difficulties in the course of the operation.

Minnie F., eight years of age, of robust health and good constitution, was born with *talipes calcaneus* of the left limb. When a year and a half old, an apparatus was applied with good effect, and she wore it until her third year. About this time while the instrument was removed from the limb, she fell from a table, and in the fall caught the leg between the rounds of a chair. Being a spoiled child, and having been allowed her own way on account of her deformity, her physician could not properly examine the case, and the fractures were not determined. Three months after the injury, she commenced to use the limb, and in a little while her mother noticed a prominence of the tibia.

One year after the injury, she was taken to the Institution for the Relief of the Ruptured and Crippled, in Lexington Avenue, New York City, and was entered as a pay-patient May 30, 1873, for "Curve of the Tibia." She continued to attend this institution regularly till April, 1874, and at intervals till February 11, 1875. During the summer of 1875 her extreme deformity excited my sympathy, and I obtained permission to examine her case. Her condition at that time is well represented by the cuts No. 1 and No. 2. No. 1 represents her standing at ease on her sound leg, and No. 2 represents her standing on her deformed limb, in which position the lower end of the upper fragment of the tibia came within one and a half inch of the great-toe.

FIG. 1.

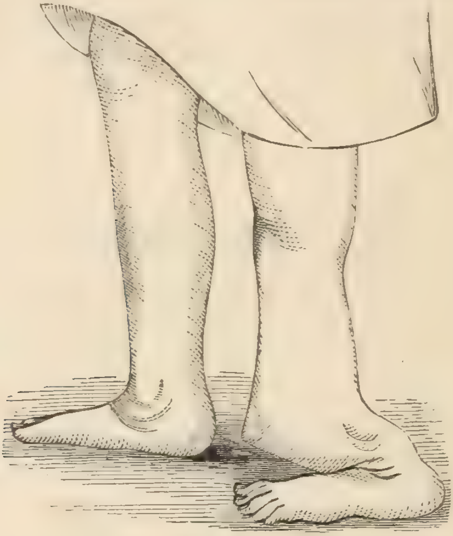


The tibia was bent at such an angle as to shorten the leg between the knee and malleolus three and a half inches. The lower end of the upper fragment of the fibula had nearly penetrated the skin at the point, where it had formed a bursa with the side of the tibia, below its angle.

After consultation with Dr. Lewis A. Sayre, it was determined to divide the tibia at the angular deformity, by subcutaneous osteotomy, and after the division endeavor carefully to extend the limb.

On the 11th of December, 1875, I performed the operation, assisted by Drs. Pettit, Pinneo, Mravlag, and McLean, the patient being anæsthetized with ether.

FIG. 2.



The operation was commenced by puncturing the skin, so as to admit a Lente's subcutaneous saw, having first so retracted the skin from the inside of the leg that it could roll back and allow the section to be made without enlarging the opening in the skin. Having entered the saw, the division of the bone was commenced upon its plane, avoiding thereby the arteries. Patient work of twenty minutes carried the saw through a very hard and ivory-like bone, and presented us with a divided tibia, and with it fresh difficulties.

Upon endeavoring to straighten the limb, it was found that the fibula was united by a bursa to the lower fragment of the tibia. This was quickly divided, and upon a second attempt at reduction the tendon of the plantaris muscle presented itself *contractured.*

This tendon was divided by a tenotome. Supposing every obstacle removed, an attempt to bring the limb in line developed the fact that the superficial fascia and skin would not admit of being stretched to a sufficient degree to bring the leg straight.

Nothing was now left but to cut off the ends of the divided tibia. The opening in the skin was enlarged, and the ends of the fragments sawed off, removing about a half-inch of bone in all. The limb was then straightened, the wound in the skin closed, and a silicate-of-soda bandage applied, care being taken to mark the spot where the section had been made.

The patient was put to bed, and one-eighth-grain doses of morphia were given every hour till sleep was secured. The next day a fenestra was cut out of the bandage opposite the wound, and it was dressed with picked oakum and Peruvian balsam.

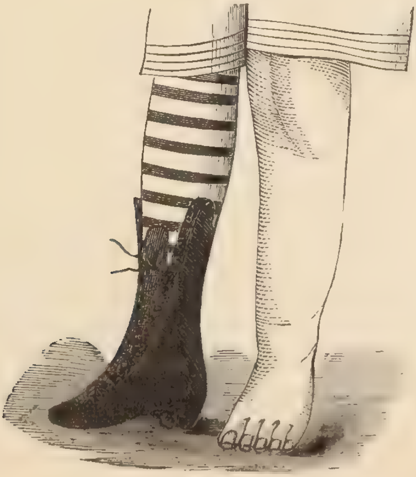
December 28*th.*—The silicate-of-soda bandage was removed, and a fracture-box, with an extension foot-piece, and counter-extension from below the knee, were applied.

January 22, 1876.—The extension apparatus was removed, and a plaster-of-Paris dressing applied, and the patient was allowed to get out of bed.

This dressing was worn until February 28th, when a leather splint was substituted.

The present condition of the limb is well represented in cut No. 3, from a photograph taken April 10th

FIG. 3.



The line of the limb is good, the union of the tibia is perfect, and the shortening less than one and a half inch.

The patient now wears the ordinary apparatus used for club-foot, the paralysis of the gastrocnemius and soleus muscles being compensated for by India-rubber tubing, and, with a thicker sole and heel, she walks around without difficulty, with the assistance of a cane, with which she balances herself.

II.—*Two Cases of Traumatic Tetanus; with Remarks.* By W. Burt, M. D., Paris, Ontario.

Case I.—B. C., a boy aged thirteen years, on August 31, 1874, received a lacerated wound of the inner side of the right leg by falling from a horse. The forefoot of the animal caught his leg above the ankle, tearing off from the inner side a triangular flap of skin and cellular tissue, as if it had been dissected back; the lower incision passed three inches around the inner side of the leg; the other, about ten inches in length, proceeded upward along the inner side of the tibia. The flap had been adjusted by interrupted stitches before my arrival. I applied water-dressing. On the second day I removed a number of the stitches and kept the flaps in position by adhesive plaster. In a few days three-fourths of the flap sloughed. The wound was cleansed daily with a solution of carbolic acid, and poultices applied. When applying the carbolic detergent, he complained of a very painful spot in the upper third of the wound, and dreaded its application. The slough separated nicely, and the wound at no time presented any untoward appearances. At the end of a week he was exposed to a draught of wind from a window, and on the following day symptoms of tetanus—fixed closure of the jaws, and epigastric pain—set in. As no real spasms were manifest, he received a Dover's powder or a dose of chloral as required. But it was not long before general spasms came on, following each other every few minutes, when he was put on extract. cannabis Indica, which was gradually increased until gr. jss was taken every hour. This produced delirium and vomiting of green matter. The dose was then lessened for a time and again increased, combined with quinine. Dr. Henwood, of Brantford, saw my patient with me on the second day of the spasmodic symptoms, and, as some little amelioration was evident, we continued to pursue the same treatment. Bowels moved efficiently by enema; concentrated nourishment and stimulants were allowed freely. The cannabis Indica had a modifying influence on the disease—the spasms now coming on every fifteen instead of every four or five minutes, as at first, and, when sleep would occur, not recurring for two or three hours. However, toward the end of the week the symptoms showed no signs of further abatement. The pulse increased in frequency, reaching 160 to 170. The temperature gradually rose and the paroxysms sometimes came on with great severity, repeatedly causing him to utter to his attendants in a most agonizing tone, "Raise me up!" This desire to be raised up when the spasms would come on seemed to be irresistible. The risus sardonicus was marked. The taking of his nourishment was facilitated by the absence of one of the middle upper incisors. Through this artificial opening he took his food from a miniature teapot; only occasionally would the food regurgitate through the nose and mouth. A sour perspiration—not unlike that observed in cases of acute rheumatism—was noted from the onset of the trismus. Poultices with anodynes were kept constantly applied to the wound, which always looked healthy. The lighting of a fly on the body would provoke a spasm toward the close.

He died during a paroxysm, on the seventh night of the disease, two weeks after the accident. The temperature was 109° one hour after death.

Case II.—F. M., aged eighteen years, a factory-girl, was injured on September 11, 1875, by getting her right forearm caught between two cog-wheels, which lacerated it obliquely across the posterior and radial side. She came to my office regularly, and had the wound dressed. Was sent for on the morning of September 28th, because she could not open her mouth. I found on arrival well-marked symptoms of tetanus. The tip of the tongue could scarcely be protruded. The spasms, which appeared to have their origin in the wound—the wounded arm being always drawn up during the paroxysms, while the other was not affected, or very slightly—came on every few minutes, and several times while the arm was being dressed. The wound looked healthy and was closing fast. The crushing of the tissues caused a small slough, which separated completely during the second week. She always complained of a painful spot at the bottom of the wound when having it dressed. Bowels were freely opened with calomel, rhubarb, and soda. Three drops of a solution of atropia sulphate, grs. iv ad ℥j, were dropped on the wound, to be repeated three times daily. After the bowels were moved the following mixture was ordered :

℞.	Potassii bromid.,	ʒ vss.
	Chloral hydrate,	ʒ iij.
	Syrup. simplicis,	℥ j.
	Aquæ,	ad ℥ iv.

M. A dessertspoonful in half a wineglass of water every two hours.

I shall not burden you with a daily account of her history, but give you the facts in a general description, as in the former case. Eggs and milk and stimulants were supplied freely. On the night of the 29th she received two doses of chloroform instead of the chloral mixture from her attendants, by mistake. Her mouth, in consequence, was sore, and her tongue swollen. But our patient stated that she had no "stretchings" that night. However, they soon returned at short intervals, and the chloral mixture was continued every two hours. The wounded arm was very rigid, and continued to provoke the spasms, which proceeded from it even when not being dressed or touched. After my first visit to the unfortunate girl, I applied for assistance to Dr. Clarke, who kindly offered it, and helped me faithfully throughout. Between us we managed to visit her three times daily. But for this, I think the girl would have had a still harder struggle, as her attendants, belonging to the lowest social order, were almost worthless. When present, we would always give her her medicine, and sometimes repeat it before leaving. From the number of paroxysms during our visits—all the attendants differing in their story of them during our absence—from her general condition, and from the wound provoking the spasms so frequently, we decided on neurotomy, thinking in order to get anything like its full benefit we should not defer it. Accordingly, on the afternoon of October 1st Dr. Clarke gave chloroform, and, with my brother's assistance, I straightened the arm, which could not be done until deep anæsthesia was produced, and applied Esmarch's bandage. I cut down upon the musculo-spiral nerve at the bend of the elbow, as we would upon an artery to ligate it, passed an aneurism-needle under it, and cut it across. The wound was closed with a couple of sutures. Not a drop of blood oozed from it while the operation lasted. The division of the nerve was made five inches above the wound on the forearm. A transverse incision through integument and cellular tissue was made an inch above the tetanic wound, to cut off the cutaneous supply, and closed with sutures. The whole was dressed with lint soaked in a solution of carbolic acid. The night following the operation she was said to have had about a dozen spasms. We found her next day inclined to sleep, probably from the chloral. Took nourishment well from us, but her attendants had ill success in giving it to her, as she had no confidence in them. At this juncture a charitable young lady, skilled in nursing, offered her assistance, and our patient henceforth was better cared for during the day, and a part of the night. Until October 7th she took her nourishment freely; could put out her tongue and open her mouth very well. We had nothing to regret except leaving her alone at times with her dire attendants, when we would almost invariably afterward find the paroxysms more frequent, but not severe. At this date the temperature rose to 102°, the highest it was noted throughout the disease. The pulse one day previous to this reached 150; but it was a day on which her menses appeared slightly. With this exception it ranged from 126 to 136. She was now engaged in taking her fifth bottle of chloral mixture. Was allowed from half an ounce to an ounce of whiskey every two hours. Some days she had only five spasms, but when they would come on she would cry out, "Raise me up easy!" Was very restless at times, and once passed her water in bed. We found (October 7th) her jaws again closed, and her tongue could not be protruded between the teeth. Dressed the wound under chloroform. Removed the sutures, which had caused some suppuration, and continued the carbolic-acid dressing. Began her chloral, which had been omitted a short time. Bowels opened freely with a drop of croton-oil. Next day, after removal of the stitches, we found she opened her mouth well, and had rested during the night. After this she again became restless, and could hardly be got to answer. The arm was dressed regularly under chloroform. I will here subscribe my remaining note nearly in full:

October 10*th.*—Bowels moved involuntarily in bed last night. Is very restless; almost impossible to keep her in bed. Nourishment is given with difficulty. Appears extremely obstinate. Body sponged and clothes changed.

11*th.*—Still very restless; tossing about all the time, except when seized with short snatches of sleep. Is in a semicomatose condition. Pupils dilated, but respond to a light. Thinking it was chloralization we had to deal with, the chloral was stopped; no veritable spasms then coming on. Eyelids adherent to each other. Ext. cannabis Indica, gr. ss, given at bedtime and repeated during the night.

12*th.*—Is more rational this morning, and is rousing from her lethargic condition; the restlessness passing away. Takes her nourishment, and told some of the attendants this morning that she felt hungry. Temperature 99°, pulse 120.

14*th.*—Complains of stiffness in her lower limbs. Straightens them out with difficulty. Incoherent in her speech. Complained of being exhausted after changing her clothes this morning.

17*th.*—In the last three days the temperature has been nearly normal. The pulse ranged from 120 to 126. Croton-oil repeated once, and ext. cannabis Indica continued at bedtime. Still wanders a little, but takes her nourishment well. Complains to-day of pain in the bowels and right side, but is inclined to sleep. Camplains of pain in the sore arm when moved. It remains in an extremely flexed position, and can be got to a right angle without much difficulty, but not farther without causing great pain. All the wounds nearly healed.

18*th*.—Arm extended a little beyond a right angle and put up in plaster of Paris.

21*st*.—Is quite calm. Ordered a mixture of iron and quinine. Cannabis Indica continued at bedtime.

27*th*.—Arm extended nearly straight and redressed with plaster of Paris. Wounds all healed. Bowels have moved without prompting. Is quite rational. Recovered her senses gradually until perfectly restored after the cessation of the chloral. Some motion of the extensors of the hand. Has complained considerably of the arm.

November 2*d*.—Says she had three or four "stretchings" yesterday. Pulse continues at 120. Is otherwise doing well.

11*th*.—Can sit up in bed, and feels as if she could get out.

14*th*.—Removed the plaster of Paris from the arm. Can nearly straighten it. Can extend the thumb and finger slightly, and rotate the arm a little. This is the last date I have in my note-book. She called at my office some time in January of this year, and told me she was going back again to the factory to engage in some light work. The middle of the forearm then measured one inch less in circumference than the other. I called at her home some time previous to this, and found her engaged in sewing with the right hand. She cannot yet extend the fingers completely, but is fast regaining the former use of them.

Remarks.—Here are two cases of traumatic tetanus very similar in their symptomatic phenomena, but with opposite terminations—the one ending in death, the other in recovery. The former obtained all the advantage of good nursing, and everything attendant on high social relationship. The latter was subjected at first to all the disadvantages of bad nursing, such as was given by intemperate parents and intemperate and ignorant friends. The shanty was destitute of everything good, save the afflicted girl, who was intelligent far above her surroundings. On several occasions in the evenings, we left a large bottle of spiritus frumenti for the poor girl, but it was nowhere to be found next morning, save in the action of the attendants. We saw our patient was destitute, and devoid of seclusion, for it was only after getting the priest to execute forcible temperance upon the friends, and threatening to remove the girl to a private house, much against their wishes (the only spark of humanity observable), that we could get them to shut out their curiosity-visitors and give the girl some degree of isolation. The shanty was alongside the railway, and although she had been thoroughly accustomed to the sound of the cars, still, no doubt, this also was somewhat against her.

These cases were very much alike in the following points: A very tender spot in the wound; the spasms coming on quite frequently when once established; frequency of pulse; their ability to take nourishment; the same piteous cry of "Raise me up!" The treatment adopted differed considerably: both were nourished and stimulated nearly alike; the former got cannabis Indica, with soothing local applications; the latter neurotomy and soothing local applications, with chloral and potassium bromide internally. If we had adopted the same line of treatment in the first as in the second case, it would have been to have put the patient on the chloral and bromide mixture, and have divided the internal popliteal nerve under chloroform, using Esmarch's bandage, making the incision over the nerve as in tying an artery. Another incision above the upper end of the wound, to divide the internal saphenous, would have been required. By somewhat similar operations we would be able to cut off the nervous supply from almost any wound in the extremities. In the case of the boy it was probably the internal saphenous that was causing the severe local pain at the upper extremity of the wound when being cleansed. Perhaps it would have been sufficient in this case to have divided the internal saphenous; but then the muscles were exposed, and I think we should not have any doubt in the matter when we have such a fatal disease as traumatic tetanus to deal with. We must not take into consideration, for one moment, the temporary, or occasionally the permanent, loss of power which might result from the division of a nerve. I am sure the patient would sacrifice a little usefulness of the extremity, if by this means we could increase his chance of recovery from so terrible a disease; and the surgeon who would refuse to grant his patient the relief which neurotomy affords, simply because some patients recover without it, would certainly be reprehensible. Now, neurotomy seems to be strongly indicated whenever we have a marked local pain in the wound, or when the spasms appear to originate from the wound, or are provoked, or their regularity of occurrence interfered with by dressing of the wound when the injury is above the fingers or toes. If the injury is confined to the phalangeal appendages, amputation would be indicated; but when above them we get all the good from neurotomy we would expect from amputation, a much more severe operation. Neurotomy, as performed on our second patient, appears preferable, and much better surgery than performing by the making of a not always practicable V-shaped incision above the wound down to the bone, as recommended by some authors. Neurotomy converts, or almost converts, a case of traumatic tetanus into one of idiopathic tetanus, i. e., if the latter equals the former, minus the wound. The reason, perhaps, why some cases have not been benefited by amputation is, because the irritated nerve has not been divided sufficiently high above the wound. We can get this division in most cases by neurotomy. This operation will do away with amputation altogether, except in cases of fingers or toes, or when amputation is indicated for other reasons. If neurotomy changes the case into an idiopathic one, it alone must be considered a great boon, owing to the much more favorable prognosis of idiopathic tetanus.

A few words about the etymology of the disease. Tetanus is plainly a misnomer. The idea we get from the disease is not that of stretching, it is one of rigid muscular contraction. It has probably received this, the most common of its names, from the conditions known as opisthotonus, etc., but I have not seen any explanation for its etymology further than that it comes from *τείνω*, *I stretch*. When we "stretch ourselves out," or extend our limbs, we relax our muscles, quite the opposite of the tetanic condition when the muscles are rigidly contracted. Perhaps there is some valid reason for the term tetanus as applied to the disease in question, but I have not seen it, and will very willingly be informed on the subject. When the body is straightened out, as it sometimes is in tetanus, can it be said to be stretched out? It is rather contracted out. Although the body can be raised at times like a statue, so can a body in *rigor mortis;* but we would never think of saying this latter was a tetanic condition when we recall the derivation of the word. If we had a word or name that would express the *ante-mortem* rigidity as well as cadaveric rigidity, or *rigor mortis* (we can hardly say these are words or names, any more than United States is a word), expresses the *post-mortem* stiffness of the body, our nomenclature would be considerably improved. How absurd it seems to say "stretching," when the real condition is one diametrically opposed to it! For the same reason how absurd is tetanic spasm, opisthotonus, etc.! A misnomer such as this may remind us of the immense importance of possessing such names for diseases as shall not involve or suggest an error. In the race for knowledge we should not allow or place any stumbling-blocks in the way that can be removed. There are enough insurmountable ones. In these days of rapid study it is no small item even to glean knowledge from the names of diseases. It is evident that a correct etymology will much assist the student. Tetanus, then, is undoubtedly a misnomer, and always was, unless its etymologist had really believed the rigidity or straightening of the body at times was produced by stretching. If this be so, it will be a word somewhat similar in its origin to lunacy; but inasmuch as the latter is not a lawful word for those who have outlived the belief that the moon had anything to do with mental unsoundness, so is tetanus an unlawful word for those who are now well aware that the disease is not one of stretching, but one of spasm and contraction. Lunacy seems to be giving place to a somewhat better term, insanity; but as yet we have no word to take the place of that of the substantive lunatic. To retain the term lunacy will only serve to show us the superstition of our ancestors; to retain the term tetanus will only be to show us the ignorance of our forefathers; but, while retaining the term tetanus for this purpose, we should have a name that would meet the wants of our present knowledge.

We are doubtless yet in our infancy respecting tetanus, and modesty with some in keeping back their cases from the journals, because of the frequent reports of this disease, has, doubtless, sprung up too soon. I think we need not apologize for reporting any case for some time to come. We have not such a superfluity of knowledge respecting the disease that we can set it aside as having finished our investigations in reference to it. Until we are agreed as to what is the best local treatment, what the best constitutional; until we ascertain which drug, or combination of drugs, is most to be relied on, or whether, for example, neurotomy when practicable shall always be resorted to in traumatic tetanus, we must still go on. It will be no little satisfaction to know which is to be the most useful drug in tetanus. Will it be chloral, Calabar bean, bromide of potassium, cannabis Indica, opium, amyl nitrite, chloroform, ether, or some other drug?

After electing a drug to be the chief ruler of tetanus, let us arrange those which have gained repute in their order of merit.

III.—*Hypodermic Injections of Cold Water for the Relief of Pain.* By S. Henry Dessau, M. D.

There appeared in the February number of the *Medical News and Library* an extract from a communication in *L'Union Médicale*, by Dr. Lélut, on the relief of pain by hypodermic injections of cold water. This appeared to my mind not only a novel but such a ready method for the relief of pain, that I determined to give it a trial at the very first opportunity, and I hasten to add my testimony to the efficacy and promptness of the remedy.

I have used the hypodermic injections of cold water for the relief of pain in three cases; and, in order that any one may estimate the value of the treatment in an impartial manner, I will give the notes of the cases:

Case I.—Was called to see Louisa W., February 29, 1876, forty-seven years of age, married, a German, patient of New York Dispensary, who has suffered from lumbago in a severe form for the past three years. She has never been entirely free from pain in the lumbar region during the whole of this time, and has had exacerbations of pain from the slightest exposures. She was suffering from one of these exacerbations, which had begun twenty-four hours previously, when I saw her. The pain was so severe that she would not trust herself to lie in bed, nor to sit down, but walked about with an unsteady, dragging, halting step, her hands pressed tightly over her loins for support. She could not be induced to straighten her back, which was bent forward, nor to sit down without assistance. The slightest movement of the muscles of the back would provoke a cry of pain.

I injected ten drops of cold water, at the temperature as drawn from the hydrant, under the skin in the lumbar region, on each side of the spinal column, and, before I had finished wiping and replacing my syringe in the case, she expressed herself as feeling relieved. She stood up without pain, and sat down again without assistance a few moments later. In less than five minutes after the injections she picked a pin up from the floor with ease. In fact, she was so much surprised at the almost magic relief of her intense pain, that she had to enjoy a hearty laugh. I did not give any other treatment.

March 1st.—Was informed that the relief after the injections did not last longer than one hour, when the pain returned with far greater intensity than before. I was anxious to learn if the puncture of the skin, as in acupuncture, had any influence in relieving the pain in this case, and as the pains were still severe, though not so bad as the day previous, I inserted the needle without injecting the water, but the relief was not given. I then inserted the needle in several places on both sides of the spinal column, as an acupuncture-needle. The relief was more marked, but nothing to be compared to what it was after the injections of cold water. The acupuncture afforded more permanent relief, however, and without further treatment she was well enough to work at making pants on a sewing-machine the next day. She could pick up anything from the floor without pain.

Case II.—March 1, 1876, Margaret M., thirty-one years of age, English, married, patient of New York Dispensary, was found complaining of bronchitis and an attack of rheumatism affecting the left ankle-joint. There were considerable swelling and redness, and inability to move the joint on account of the great amount of pain. The slightest pressure of the hand could not be borne about the joint. The attack was of little more than twenty-fours' duration.

I gave an hypodermic injection of ten drops of cold water, just above and to the inner side of the ankle-joint. In less than three minutes I was allowed to handle the parts without complaint, and in a few minutes more, at my request, the patient got out of her bed, rested her weight upon the affected foot, and even took several steps about the room. Of course, there was a certain amount of weakness in the joint that compelled her to limp, but the walking gave her no pain. I prescribed internal treatment for the bronchitis and for the rheumatism. On the following day I saw her, and she was coming down-stairs, with the aid of a cane. She had had no return of the pain in the ankle-joint to complain of.

Case III.—March 9, 1876, saw John M., fifty-four years of age, married, Irish, patient of New York Dispensary, who was suffering from an acute attack of nodular rheumatism, or *rheumatoid arthritis*, involving the shoulder, elbow, wrist, and knee joints of the right side. He was an old sufferer from this disease, showing the marks of it in his finger-joints. The present attack had lasted one week. He complained of great pain, both when the joints were moved and at rest. I injected several syringefuls of cold water hypodermically about the affected joints, with the result of allaying the pain, so as to make the patient feel quite comfortable in about five minutes.

I repeated these injections two days after, when the left knee was attacked, with a like favorable result. In all these cases slight complaint was made, at the moment of injecting the water, of a burning sensation; but not more, I imagine, than when any other fluid is used for a like purpose. There was no after-effect complained of in any of these cases. In the last case mentioned, I suppose that I injected ten syringefuls of water at one visit, so that there is no danger of the quantity employed. It certainly is a most valuable and ready means of relieving pain, especially where there is a desire to withhold morphia, or there is a doubt about the quantity to be used to effect speedy relief from pain. I am satisfied that whoever gives the hypodermic injections of cold water a trial for the relief of pain of a rheumatic character, will be well pleased with the result.

Case IV.—March 23d, Mary D., aged thirty-one years, married. Irish, patient of New York Dispensary, was attacked with articular rheumatism five days ago. The shoulder, elbow, and knee joints of the right side involved. Used hypodermic injections of cold water over each joint, with the effect of relieving the pain instantly. *The pain did not return*, and, with drop-doses of the stronger liquor ammonia, repeated every two hours, she recovered in a few days.

Case V.—March 27th, Mary P., thirty years of age, Irish, married, patient of the New York Dispensary, was suffering with articular rheumatism affecting the great-toe of the right foot for three days. An hypodermic injection of cold water relieved the pain instantly. Was given drop-doses of the stronger liquor ammonia hourly.

31*st*.—Pain did not return in the great-toe, but the left knee has been involved for days. An hypodermic injection of cold water was given over the knee-joint, with the effect of relieving the pain instantly. The internal treatment was continued, and recovery went on promptly, so that she was up in two days after. The pain did not return in the knee.

Case VI.—March 29th, William P., twenty-five years of age, married, American, patient of New York Dispensary, was attacked with articular rheumatism six weeks ago. It is now of a subacute form. Has pain in the right shoulder and over the thorax; the latter increased on deep breathing. Gave an hypodermic injection of cold water over the shoulder-joint, which relieved not only the pain in the shoulder but also that over the thorax. The patient moved his residence before I was able to see him the second time.

Case VII.—April 1st, Ann R., thirty-seven years of age, married, American, patient of the New York Dispensary, was attacked four days ago with articular rheumatism, affecting the left knee-joint. Gave an hypodermic injection of cold water over the joint, which relieved the acute pain instantly. She complained of a feeling of stiffness on moving the limb afterward. The pain returned in about two hours, but not so severe as at first. On my second visit I ordered a blister to be applied around the limb above the joint, and gave acetate of potash and colchicum internally. The case is still under treatment.

Notes of Hospital Practice.

BELLEVUE HOSPITAL.

Fracture of the Os Calcis; Treatment.—The rarity of this fracture, together with the doubt suggested by Malgaigne as to some of the causes of it, makes all reported cases of special interest.

The history was as follows: A man while ascending a ladder fell down three steps, and struck the tense tendo-Achillis on the last rung. When he was examined in the ward a fracture of the os calcis was found at a short distance anterior to the insertion of the tendon. The displacement of the fragment was not very marked.

This case might be considered practically as being due to muscular action, and if it is so considered it ranks with the eight cases from that cause collected by Malgaigne.

The principle of treatment in this class of cases consists in keeping the leg sufficiently flexed to diminish as far as possible the contraction of the soleus and gastrocnemius muscles. This may be effected either by placing the leg and foot in plaster, after having secured the proper position, with reduction of the fragments, or some one of the different appliances which have been adopted may be had recourse to. The present case was treated by means of the shoe, with strap attached to a band around the thigh, as figured in Dr. Hamilton's work on fractures.

It was found necessary to retain the fragments in position by means of a firm compress around the ankle. After the "shoe and strap" had been kept applied for three weeks, they were removed. It was then found that there was present a callus, large in amount and sufficiently firm to prevent any displacement of the fragments. As the callus consolidated further, the patient was able to walk about, and at the present time he can move his foot without difficulty.

Comminuted Fracture of the Humerus.—A case of comminuted fracture of the humerus has been recently under treatment, and was of interest from the amount of injury the arm received without producing either a compound fracture or a dislocation. The patient had his arm caught in the chain of an elevator, and on admission to the hospital the humerus was found to be broken into four pieces. The treatment consisted in applying Buck's extension to the arm till consolidation of the fragments had taken place. After that a plaster-of-Paris bandage was used. The result obtained was very satisfactory.

Strangulated Hernia; Formation of Pus in the Sac.—A patient entered hospital suffering from a strangulated hernia of large size. After having had recourse to different methods of reduction, and failing in them, Dr. D. L. Wallace, the house-surgeon, operated on the patient in the usual manner. The stricture was found at the internal ring. For three days after the operation the patient did well, but at the end of that time the temperature increased to 103°. The sac was then opened, and found to contain pus. After this was evacuated, the patient made a good recovery.

Ligature of Carotid; Suppuration resulting from the Use of the Carbolized Catgut Ligature; Cancer of Inferior Maxilla.—A patient entered hospital suffering from an epithelioma of the lower lip, situated on the left side. The case was operated upon by Dr. Stephen Smith. Nine months after the operation a tumor appeared in the region of the lower jaw, and continued to increase in size for nine months, when he again came under observation. It was then nearly circular in shape, and measured about five inches in circumference, and involved the ramus of the jaw. The patient was unable to open his mouth, and suffered very much from the discomfort caused by this large mass.

It was considered judicious to tie the common carotid artery before attempting the removal of the mass. This operation was performed in the usual manner, carbolized catgut being used to secure the vessel, as advised by Lister.

On the eighth day after the operation pus was detected at the seat of ligature, and up to the fourteenth day the discharge continued profusely; on the fourteenth day the carbolized ligature came away, and after that the wound closed.

After ligation of the vessel the tumor decreased in size, but at the present time it is quite large. An interesting point was that, although considerable care was taken to secure an imported catgut ligature, it did not prevent suppuration.

The operation proposed in the future for the removal of the growth is either the excision of half of the inferior maxilla, after the usual manner, or an attempt at the removal of the tumor by means of the galvano-caustic apparatus.

MOUNT SINAI HOSPITAL.

Luxation forward of the Odontoid Process from Caries of the Atlas; Prognosis.—A case of gradual luxation of the odontoid process of the axis recently occurred in this hospital. The history was mainly as follows:

About a year ago a man presented himself at the hospital suffering from retro-pharyngeal abscess. After a careful examination, it was found that the cause of the abscess was either caries or necrosis of the atlas. During the time he was under observation, paralysis of the legs appeared. This became progressive, and for the past two months the lower extremities were completely involved. Latterly the upper extremities became affected, and at the time of the patient's death he was unable to lift his forearm above the line of the nipple. The end of the patient was hastened by dyspnœa, which lasted for a fortnight, but for the last week or ten days was very severe. At the autopsy, the atlas was found to be in great part destroyed. The odontoid process of the axis had apparently passed gradually forward, and after involving the motor and sensory tracts had eventually pressed upon the respiratory centres. The spinal cord was flattened out and moulded about the periphery of the odontoid process.

A case somewhat similar to the foregoing is at present passing around among the different hospitals of the city. When he was last seen a sinus could be found in the pharynx leading to dead bone in the axis. The impending danger to the patient is that, by jumping, or in any other way causing concussion of the vertebræ, the odontoid process may be carried forward and cause death.

Injections of Carbolic Acid in Rheumatism.—Injections of carbolic acid have been used with benefit to relieve the pain of acute rheumatism, by the house-surgeon, Dr. A. Scharpringer. The method is similar to that practised at St. Francis's Hospital, and consists in using an aqueous solution, containing from three to five per cent. of the acid. About twenty minims of this solution are used at each injection in the neighborhood of the affected joint, and the results, though not permanent, are sufficient to relieve the patient temporarily. In regard to this species of medication an important question arises, and it is this: Does the relief come from the water of the solution, or from the contained acid? When it is remembered that a large number of cases have been reported in which water alone proved sufficient to relieve paroxysms of pain for a short time, it would seem that our knowledge of the effects of hypodermic medication is by no means complete, and that further observations are necessary in this direction.

Peritonitis; Gangrene of the Vermiform Appendix.—A man entered hospital suffering from general peritonitis, and soon afterward died. No satisfactory history could be obtained. At the autopsy, evidences of general peritonitis were found. The appendix vermiformis was bound down by adhesions, and was in a gangrenous condition. The softened state of the tissues prevented a sufficiently accurate examination to be made to demonstrate the cause of the gangrene. It was suspected, however, that it was due to adhesions.

Salicylic Acid in Rheumatism.—The use of salicylic acid has been continued in cases of acute rheumatism, but it has not proved to be so valuable an agent as was predicted by some of the German observers. In some of the cases, however, it acted very satisfactorily.

NEW YORK FOUNDLING ASYLUM.

Strangulated Hernia in a Child; Spontaneous Reduction.—A child aged two years had since its birth been suffering from an inguinal hernia. A truss had been applied, but, on account of an excoriation produced, it was removed. Some weeks afterward it was found that the patient was suffering considerably from pain, and on examining the hernia it was noticed to be hard and irreducible. An anæsthetic was administered, but all attempts to reduce it proved of no avail. The condition of the patient did not warrant operative procedures, and on the following morning it was found that the hernia could be returned without difficulty. A few days afterward the patient died. At the *post-mortem* examination a slight stricture was found at the internal ring, but no signs of peritonitis were present. The cause of death was bronchopneumonia.

Correspondence.

Instructive Class Demonstration of the Action of Digitalis, by Means of the Kymographion, in the Laboratory of Prof. Binz, of the University of Bonn. (Reported specially for this JOURNAL, by G. FARRAR PATTON, Student of Medicine in Bonn.)

EDITOR NEW YORK MEDICAL JOURNAL:

WITH the belief that the following chapter from the laboratory teaching of Prof. Carl Binz, the distinguished Director of the Pharmacological Institute of the University of Bonn, will prove interesting to all the readers of your JOURNAL, and very instructive to many of the younger members of the medical profession in the United States, I take the liberty of transmitting the same to you for publication. First, a word or two by way of preface. In the German universities materia medica, or, as they say, *pharmakologie*, is taught largely by demonstrations, for which purpose every facility is supplied in the way of drugs, chemicals, apparatus, animals for experiments, etc., etc.; and the experiment about to be described is only one of the many that are given nearly every day. The same system of demonstrative teaching is followed in every department of science, physiology, pathological anatomy, and so on, every branch having a separate institute, sometimes occupying a whole building, as in the case of the Chemical, Anatomical, Patho-anatomical, Astronomical, Obstetrical, and Physiological Institute at Bonn. The subject illustrated by the experiment in question was the effect of digitalis on the heart.

A summary of Prof. Binz's preliminary remarks is as follows: The active principle of digitalis-leaves is represented by the commercial *digitaline*, a substance which is really composed of two if not more distinct non-nitrogenous glykosides, viz., *digitaline* and digitaleïn. Of these the latter is most abundant, and is alone soluble in water; it also possesses all the known physiological properties of the plant. It is only slightly irritating to the stomach and is readily absorbed. Digitaline being a poison, is occasionally used for criminal purposes by persons hoping to cheat the analytical chemist who may examine the stomach of the victim, by making use of a rare poison and one for which the tests are not generally known. This occurred a few years since in Paris, where a certain homœopathic physician used digitaline to poison his mistress. But suspicion was aroused against him, and a clew was given by the fact that the digitaline-phial of his case was found to be nearly empty, upon which expert chemists set to work to discover a reliable test for this uncommon poison; they succeeded in doing this, and the test as demonstrated to the class is as follows: A watery solution of digitaleïn (the most active principle) is acidulated in a small test-tube with two or three drops of nitric acid, after which a small quantity of phospho-molebdynic acid is added, and the whole gently heated, by which a pale-green color is developed. Allow this to cool, and add a little liquor ammonia, when the green tint changes to light blue. Heat again, and the liquid becomes quite clear. This test was finally shown with only a slight trace of the poison present, and, being so complete, is a valuable one. To complete the test, a small quantity of the supposed digitaline may be extracted from the stomach, purified, and injected into the system of a frog, when the characteristic retarding of the heart's action will be produced. In the action of digitalis upon the heart three stages are to be observed: 1. The force of the arterial circulation is increased and the frequency of the pulse diminished—due, first, to a direct irritation of the heart-muscle, and secondly to irritation of the vagus nerve; 2. A brief return to normal conditions is observed, provided the dose has not been too large, in which case the first stage may be followed immediately by the third, when a rapid decline of arterial pressure and an equally striking increase in the frequency of the pulse become manifest. To these a fourth stage might be added, when the pulse becomes fluttering and irregular, and finally disappears beyond the power of recall by electrical or other excitement. At the first lecture on the subject, the stage of increased force and diminished pulse-frequency was exhibited upon frogs; but the crowning demonstration was that of the lecture of to-day, when by means of the *kymographion* a complete card of ink-tracings from the carotid of a rabbit was obtained in the presence of the class. The instrument in question is that of Prof. Marey, of Paris, consisting essentially of an upright cylinder covered with paper and made to revolve by clock-work; upon this paper the tracings are drawn by means of a fine camel's-hair pencil attached to the tip of a slender staff (Prof. Binz used a feather rib). This staff is balanced lightly upon a pivot-axis, and quite close to its fulcrum-point; the short end of this bow is pressed by a small bit of cork attached to a drum-head of thin sheet-rubber. This rubber is stretched air-tight upon a cup communicating from behind by means of a small but stiff rubber tube with a ⊥-shaped lead pipe of small calibre. One end of the horizontal arm of this ⊥, as just indicated, is in connection with the elastic drum, upon which the tracing-lever is lightly balanced, while the other end communicates by means of a rubber-pipe joint with a glass tube drawn to a small point, so as to facilitate its introduction into the carotid of the animal to be experimented upon. The vertical arm of the inverted T is connected with an elevated reservoir containing a saturated solution of carbonate of soda. Of course, there are a few stopcocks at convenient places. Now, it is known that a glass tube so introduced into the carotid of a living animal is very apt to become stopped with a plug of fibrine. Therefore, the solution of carbonate of soda is made to press against the heart with hydrostatic force just equal to the pressure of the circulation, by which two ends are gained: first, the blood is prevented from coagulating in the tube; and, secondly, from passing out into the lead pipe. The drum-head and its cup being elevated above the level of the horizontal arm of the leaden tube with which it is connected and perfectly air-tight, the soda solution cannot press upward to it, and so, when the connections are all opened, every impulse of the heart is communicated from the carotid to the soda solution in the lead pipe, from this to the compressed air behind the rubber drum-head and on to the balanced lever; the latter, of course, sways up and down in rhythm to the beats of the heart, and, as it moves, the point of the camel's-hair pencil traces curves upon the revolving barrel. An assistant supplies ink to the pencil, and so the tracing goes on uninterruptedly. The adjustment of such an instrument is a matter of no little delicacy and skill, but Prof. Binz is an accomplished experimenter, and the whole worked like a charm. As soon as the tracing fairly began, a quantity of fifteen milligrammes of common digitaline was injected under the skin of the rabbit, and we soon saw the effect. In fifteen minutes the arterial pressure had increased so much that the point of the pencil vibrated on an horizontal line more than an inch higher than the one where it had begun, and the waves were considerably longer, showing a diminution of rapidity. This went on until an inch and a half of elevation had been thus reached, at which time the pencil was making long and powerful sweeps, indicating a maximum of arterial force. Then the retrograde motion set in, and the tracings sank lower and lower upon the barrel, the excursions of the pencil getting weaker and shorter all the while, clearly showing a rapid falling off of power. At this juncture Prof. Binz injected an hypodermic syringeful of ether, in order to see whether this energetic cardiac stimulant would cause the heart to put forth fresh energy, but the pencil soon came to a standstill, and the experiment was over. The rabbit was not dead, however; the blood had only coagulated in the tube. The impression produced upon the class was very marked, and it may be fairly asserted that they understand and will remember all about the action of digitalis better from having seen it so demonstrated than if they had studied the subject for a month. In fact, I doubt if a single one of these fellows will ever forget it, and, as digitalis is an agent in such common use, the lesson will prove of great value. Special attention was also called to the fact that digitalis sometimes shows a cumulative action in the system, and to the importance of keeping this in mind in therapeutics. Thus it is that materia medica is taught in Germany.

Proceedings of Societies.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Stated Meeting, April 13, 1876.

Dr. Wunderlich presented a specimen with the following history:

Mrs. A., aged forty years, German, first seen in October, 1875, complaining of palpitation, precordial pain, dyspnœa, cough, and headache. Exploration revealed marked hypertrophy, irregular cardiac action, at times intermitting, with strong impulse. Systolic blowing murmur heard over apex, and becoming louder on approaching the base of the heart, or left side of the sternum. Second sound heard over pulmonary valves, loud but ill defined. Aortic sounds normal; a blowing murmur synchronous with the pulse was heard over the arch of the aorta and large vessels of the neck.

Patient had never had rheumatism; indeed, no serious illness for a number of years. A brother and sister died of cardiac disease. Her previous attacks were similar to this, except that she had never had cough and dyspnœa. Digitalis quickly relieved the symptoms, and she was not again attended till April 1, 1876, when she was found to have been ill for several days before calling for medical aid. She was suffering from pneumonia of lower lobe of left lung. Temperature 104°, respiration 36, pulse 130, and irregular. ℞. Quinia and digitalis.

April 2d.—Patient much better. Temperature 100°, respiration 30, pulse 96. During this evening she had several chills, followed by high fever, and on April 3d the upper lobe of right lung was found also involved. Temperature 103¾°, respiration 38, pulse 130, and irregular. Quinine and digitalis were ordered as before, but without the former good effect. From this time the temperature varied from 100° to 102½°, respiration from 32 to 36, pulse from 110 to 140.

Digitalis was discontinued, and quinine with narcotics for the distressing cough was substituted, patient being also carefully supported by proper nourishment. Stimulants were tolerated only in moderate doses. On the *left* side the *râle redux* was heard on April 5th, and the disease terminated in resolution. The *right* lung was still hepatized, when, on the 8th, the heart's action became very irregular and weak, the pulse being at times quite feeble, rapid, and intermittent. Owing to the rapid respiration, 40, loud, moist *râles*, frequent cough, and irregular heart-impulse, auscultation of that organ gave unsatisfactory results. The patient gradually sank, and died on the 10th of April.

At the necropsy, thirty-two hours after death, the following results were obtained:

Right lung, upper lobe, gray hepatization. Œdema of lower lobes and of entire left lung, resolution being nearly complete on that side. Heart large; cavities distended with soft, dark coagula. A clot was found in right ventricle, firmly adhering to posterior segment of the tricuspid valve, and extending into right auricle. It was so white and dense that those present at the autopsy agreed that it must have been *ante mortem* in its formation. Even now, after forty-eight hours' maceration in aqueous solution of carbolic acid, the clot is still firmly adherent. The pulmonary valves are very much thickened; the contiguous margins of anterior and left leaflets are firmly united for one-half their extent. Pulmonary artery dilated, but the valves exibited no insufficiency by the hydrostatic test. Mitral valve thickened and evidently insufficient. Aortic valves normal. Arch at aorta and large vessels dilated and atheromatous. Liver large and fatty; spleen small, kidneys large.

Dr. Segur regarded the *ante-mortem* clot as more characteristic than any other he had ever seen.

In reply to a question, Dr. Wunderlich stated that he used the *infusion* of digitalis, the drug being given to aid the action of the quinia, and to lessen the dyspnœa by reducing the frequency of the pulse.

Dr. Segur said he would give digitalis in any case of disturbed circulation, connected with hypertrophy, without regard to the location of the valvular lesion, or to the presence or absence of dilatation.

Dr. Wunderlich spoke of Niemeyer's rule, viz., "Give digitalis when turbulent action and irregular contraction of the heart prevent the proper filling of the ventricles."

Dr. Giberson had found digitalis most useful in uræmia, but could not decide whether it acted as a cardiac stimulant or a diuretic. He spoke of sudden death occurring under use of digitalis, and referred to Dr. Fothergill's paper in a recent number of the *Lancet*. He said he preferred the fluid extract given in hot or warm water. In cases of œdema with severe orthopnœa, he gives five minims every two hours until symptoms are relieved.

Dr. Hesse doubted the diuretic action of digitalis, and had not been able to verify any such theory in his experience.

Dr. Hesse presented a microscopic section of the umbilical cord of a fœtus prematurely born, at about the fifth month, having been dead about two weeks. The father was syphilitic. The section of the cord showed, under the microscope, evidences of syphilis. The walls of the vessels were harder and thicker than normal, and their lumen irregular in size. At one spot the cord was much narrowed, and the vessels were dilated on the placental, contracted on the fœtal side of this constriction.

The *immediate* cause of death in this case was torsion of the cord. The mother had now been pregnant *six* times, and had aborted every time.

In reply to a question, Dr. Hesse stated that, when death *in utero* is due to syphilis, white patches of degeneration are found in the placenta, and the walls of the umbilical vessels are also thickened.

Dr. Westbrook presented, for Prof. S. G. Armor, the rectum and sigmoid flexure of the colon from a man dead from chronic dysentery.

The patient was admitted to the Long Island College Hospital in a very feeble condition, and died in a few days. At the autopsy Dr. Wunderlich found great emaciation; a small amount of clear serum in the left pleura, with slight adhesions; rectum and colon very much thickened, and large patches of ulceration, four or five inches in extent, existed, the intervening mucous membrane being pale and bloodless. This condition existed throughout the colon, but was best marked in the sigmoid flexure and rectum. After some remarks by the members, on dysentery, and especially the army form of the late war, the Section went into executive session.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, April 26, 1876.

Dr. C. K. Briddon, President.

Report of Cases of Exsection of the Hip-Joint.—Dr. L. A. Sayre presented specimens and read the histories of eight cases of morbus coxarius in which he had performed the operation of exsection of the hip-joint.

Case I.—Was four years of age. The family history was good, and there was no recollection of having received any injury. The child was much debilitated from a profuse discharge of pus coming from the diseased joint. Exsection was performed, March 28, 1875. When the joint was opened, the head and neck of the femur were found to be absorbed, and the upper part of the shaft to be covered with a thick involucrum. After sawing off the femur below the trochanter minor, it was found necessary to make a section one-fourth of an inch lower down to remove the whole of the diseased bone. The patient was treated in the usual way, by placing him in a wire cuirass.

June 13, 1875.—The sinuses have nearly closed. Patient placed in long extension-splint.

January 1, 1876.—Can walk with the splint applied. Considerable motion at the hip-joint. The sinus on the posterior part of the ilium has not completely closed.

Case II.—Boy five years old. Family healthy. The disease began two years and a half ago, when he fell and struck his knee. The treatment of the case consisted in applying blisters at intervals. When he came under the observation of Dr. Sayre, he was very much emaciated. The disease was in the third stage. Exsection was performed April 30, 1875. The head was partly absorbed, and a portion was unattached in the joint. The acetabulum was perforated. The neck and part of the shaft of the femur were absorbed.

February 2, 1876.—Sinuses closed. Has motion at the joint. Can stand upon leg when splint is removed.

Case III.—Girl six years of age; family history good. Does not recollect having received any injury. The history of lameness extends back to February, 1872, when seen by Dr. Sayre. The leg was shortened, fixed, and adducted. Two sinuses were found on the anterior part of the thigh. Operation performed March 31, 1875. The head and great part of the neck of the femur were absorbed. The acetabulum was perforated by an opening half an inch in diameter. The femur was sawed off half an inch below the trochanter minor. Several pieces of dead bone were removed from the acetabulum. After the operation the child did well, and in August, 1875, was pretty thoroughly recovered.

Case IV.—Girl aged five years. This patient was seen by Dr. Sayre when in the third stage of the disease. No history could be obtained. The limb was partially anchylosed, and was in the position usually seen in that stage of the disease. Several sinuses existed on the outer and posterior aspect of the thigh. The exsection was performed September 22, 1875. The head was nearly absorbed, and a part of it loose in the joint. The acetabulum was perforated and plugged by remains of the head. The femur was sawed off above the trochanter minor.

November 18, 1875.—Removed from the cuirass and placed in the long splint.

February 2, 1876.—Child has been walking about since the long splint was applied. Short hip-splint substituted for the long one. Sinuses nearly closed.

Case V.—Girl aged three years. Parents healthy. No direct history of injury. Disease first noticed during summer of 1874. An abscess appeared on posterior part of the thigh during the summer of 1875. At the time of operation the abscess previously noticed continued to discharge. Limb shortened, anchylosed, and adducted. Exsection was performed September 29, 1875. The head, neck, and part of the great trochanter, were entirely absorbed. The acetabulum was perforated. After removing the dead bone the patient was placed in the cuirass.

December 13, 1875.—Patient able to walk about.

Case VI.—Girl aged seven years. Patient jumped from a high stoop two and a half years before the operation, and from that time complained of trouble with her hip. Three months afterward was seen by a physician, who made a diagnosis of morbus coxæ in the second stage. A short splint was then applied for three months, with benefit, but was removed during an attack of scarlet fever and never reapplied. At the time of operation the limb was flexed, adducted, and anchylosed. Several sinuses were noticed around the hip, which, when a probe was introduced, proved to lead down to dead bone. Exsection performed December 15, 1875. The head of the bone was partially absorbed. The femur was sawed off below the trochanter minor.

February 2, 1876.—Child placed in long splints.

Case VII.—Boy aged nine years. The child's mother died of phthisis. The disease of the joint existed for three and a half years before entering Bellevue Hospital. On admission, the right leg was flexed at hip and knee-joint. An abscess was found over the right anterior spinous process. There were also evidences of amyloid disease of the kidney and liver. Exsection performed February 2, 1876. Head partly absorbed. Acetabulum perforated, and through the perforation the head had passed, rendering luxation impossible till the femur was sawed off below the trochanter minor. Hæmorrhage took place from the involucrum, but was controlled by a compress. After the operation the child was placed in a cuirass, but afterward, on account of a bed-sore, was placed on a water-bed, with a splint on the well side. The patient died April 19, 1876, from exhaustion. The liver, spleen, and kidneys, were waxy.

CASE VIII.—Boy, aged eight; family history good. When seen by Dr. Sayre there were five fistulous openings leading down to diseased bone. Exsection performed April 5, 1876. Head and neck absorbed. Acetabulum perforated. An abscess existed between ilium and inner periosteum.

Dr. ERSKINE MASON asked Dr. Sayre how many of the whole number of cases upon which he had operated died within the first year of the operation. Dr. Sayre said he could only answer from memory, but he did not think that there were more than eight, and of these only three were uncomplicated. Dr. Mason was of the opinion that in nearly all of the cases where the suppuration had existed for a length of time there was amyloid degeneration, and he thought that it was important to ascertain if after the operation this amyloid degeneration was checked. He referred in this connection to a case which Dr. Sayre operated on a few years ago. The patient recovered, although there was extensive degeneration of the liver and kidneys.

Dr. Sayre recollected the case. The condition of the patient was extremely unfavorable, but after he recovered from the operation he continued in good health for over two years, when he died of acute nephritis brought on by exposure to cold. The age of the patient was ten years. No autopsy was obtained.

Dr. GIBNEY had noticed that when patients were affected with extensive degeneration of the viscera, the cessation of a chronic suppurative discharge lessened the amount of degeneration, as evidenced in a diseased state of the liver, and less amount of albumen and casts in the urine.

Dr. KNAPP said that it was impossible, in the present state of pathological research, to say what might be the duration of amyloid degeneration. He referred to a case of amyloid degeneration of the choroid, which he presented to the Society at a meeting in June, 1873. He had seen the patient quite recently, and found him in perfect health. The degeneration involved the arteries of the choroid.

Fish-Bone removed from the Pharynx.—Dr. SAYRE also presented a fish-bone which had been removed from the pharynx by a parachute probang. The bone was the shoulder of a codfish. The probang acted with much satisfaction.

Morbus Coxarius; Spontaneous Cure.—Dr. A. B. CROSBY presented a specimen of diseased hip-joint which showed the efforts of Nature to promote a cure. The history of the case pointed to a period of long suppuration, resulting in death. An examination was made by Drs. Sayre and Crosby, but inasmuch as a cure had taken place and was nearly complete, it was not considered advisable to operate. The evidences of cure were a firm anchylosis, with decreased amount of suppuration. When the joint was examined after death, the tissues in the neighborhood were found quite healthy, with the exception of sinuses leading from three openings in the anchylosed articulation. One sinus passed in front of the anterior intertrochanteric line and discharged pus into an abscess on the inner aspect of the thigh. Another sinus came from an opening in the roof of the acetabulum, and passed into an abscess immediately below the pubes. Before exhibiting the joint to the Society, a button of bone had been removed by the trephine from the anterior surface. The inside of the joint was thus rendered visible, and in it were seen the remains of the loose, carious head. Had the strength of the patient kept up, the whole of the head would have become disintegrated and passed out through the sinuses. Some discussion took place in regard to the time of performing the operation. Dr. Crosby was in favor of immediate operation upon the discovery of dead bone. Dr. Sayre thought that, if no improvement took place after drainage and extension were practised, it would be wise to operate. When cases were left to the unaided influence of Nature the results were slow cure, with shortening and anchylosis.

Epulis of Lower Jaw.—Dr. BEVERLY ROBINSON presented a specimen of epulis, which he had removed from a female patient under the following circumstances: Three years ago, noticed a swelling of the gum to the left of the median line, which continued to grow slowly for six months, when she became pregnant. During the period of utero-gestation the growth was quite rapid, but after delivery not much advance was made. The patient came under observation one month ago, and at that time the growth was about the size and of the appearance of a cherry. There was no special pain complained of, except in damp weather, when it became sensitive. When the growth was closely examined, it was found to be of a rosy color, and attached by a broad base to the periosteum of the left lateral incisor. It was, however, not adherent to the bone. There was no pulsation in the mass. Three weeks ago the epulis was removed. The operation consisted in cutting out a portion of bone at the base of the growth. On examining the growth after having made a section, it was found to be homogeneous, and did not contain an incisor tooth, as was suspected. From a microscopical examination it should be classed as a specimen of sarcoma, of the spindle-celled variety. The glands in the neighborhood were not enlarged.

Some discussion took place as to the probability of the return of this disease. Dr. Mason had seen several cases return after the operation. In one of them the epulis reappeared four months after the removal. Dr. Crosby had operated in one case, and removed the tumor and periosteum. He found that it returned in a month. At a subsequent operation he took out a portion of the subjacent bone, and found that no return occurred. Dr. Briddon noticed that in two or three cases there was no enlargement of the surrounding lymphatic glands.

Sarcoma of Tongue and Pharynx simulating Epithelioma.—Dr. Francis Delafield presented to the Society the larynx, pharynx, and part of the tongue, of a woman aged sixty-seven. The patient entered Roosevelt Hospital March 17, 1876. Four months previously the cervical glands on the right side enlarged, and subsequently a small tumor appeared on the right side of the tongue, which extended over its base and involved the pharynx and posterior nares as far as could be seen. Dr. Weir removed a portion of the tongue, and during the operation asphyxia took place. Tracheotomy was performed immediately and the patient was resuscitated, but after eleven days died of bronchitis.

When the case was examined, *post mortem*, the base of the tongue, all of the wall of the pharynx, the posterior nares, and a portion of the epiglottis, were involved. The soft tissues of the neck and cervical glands were also infiltrated. The lungs showed evidences of lobular hepatization of a gangrenous character. Dr. Delafield said that he thought the condition of the lungs was caused by the inhalation of gangrenous particles from the tumor of the mouth. When the diseased tissues were examined under the microscope, they gave evidences of that variety of sarcoma which had its origin in the lymphatic glands. From the clinical history, it would be supposed that the disease was of the epithelial variety; but no such evidences were discovered by the microscope. Dr. Delafield said that he had never before observed a growth presenting the same characteristics of locality and progress, and was not aware of any reported cases.

Dr. C. Heitzman had seen a case resembling it.

Dr. Beverly Robinson referred to a case of sarcoma of the neck, presented by him a few months ago. He said it was the only one of its kind that he was aware of.

Fracture of the Femur.—Dr. Erskine Mason presented the head, neck, and portion of a femur, with the following history: A negro woman, aged sixty, sustained an injury of her leg, resulting in fracture below the trochanter. The patient was suffering from Bright's disease and bed-sores, but lived for ten months after having received the injury. At the autopsy the union was found to be complete.

Dr. Mason presented a second and somewhat similar case. The patient was a woman aged seventy. While walking she fell, and received an oblique fracture of the shaft of the femur. Both of the cases were healed by Buck's extension. The latter one lived for forty days, and died of broncho-pneumonia. At the autopsy two oblique fractures were discovered. The special interest in the case was the occurrence of fracture of the shaft instead of intra-capsular fracture, in a patient of such an age.

Removal of Suppurating Bursa.—Dr. Post presented a bursal sac, which he had removed from a patient forty-five years of age. The bursa appeared six years ago, but only within the past few months did it begin to suppurate.

Stated Meeting, May 10, 1876.

Dr. C. K. Briddon, President.

Aneurism of the Aorta simulating Pott's Disease.—Dr. Lewis A. Sayre presented, on behalf of a candidate, a specimen consisting of the dorsal vertebræ with attached aortic aneurism. The history read by Dr. Sayre was to the effect that a patient aged forty-two received an injury, during June, 1874, by being thrown from a wagon. One week afterward symptoms of peritonitis appeared, but gradually passed away. Subsequently the patient entered St. Luke's Hospital, with some of the symptoms of Pott's disease. Relief from pain could only be afforded by resting on the stomach, extension of the extremities being made at the same time. Some benefit was obtained by placing the patient in a plaster-of-Paris dressing. Subsequently, a diagnosis of aneurism of the abdominal aorta was made. The patient died suddenly on April 26, 1876.

Autopsy.—The left pleura was filled with blood, and on looking for the cause it was found that an aneurism had ruptured at the angle of the ninth rib. The size of the aneurismal sac was fifteen inches in one diameter by thirteen in the other. It contained twelve ounces of blood. The six lower dorsal vertebræ were eroded by the pressure of the tumor, and in some of them there was nearly complete destruction of the bodies, leaving only cartilaginous septa to retain their form. The seventh, eighth, and ninth ribs were in a state of necrosis.

Rupture of the Spleen.—Dr. Finnel presented a spleen, with the following remarkable history: The patient was twenty-eight years of age, and the mother of three children. There was no history of previous disease. Suddenly, while lifting a stove, she felt that something gave way, and consequent on this, severe pain in the abdomen. At that time the patient was in the third month of her pregnancy. The abdominal pain continued steadily for three days, when abortion came on, and on the following day she was delivered of a decomposed fœtus. The physician who was called on to attend her during the abortion suspected, from the severity of the pain, that the patient was suffering from peritonitis. Four hours after delivery the patient died. At the autopsy, two pints of blood were found in the peritonæum, and on examining for the cause it was noticed that blood was escaping from fissures in the spleen. There was no extravasation in or about that viscus to show the effect of injury. The spleen weighed five ounces, and resembled currant-jelly. The other viscera were healthy. The points of particular interest in the case were, the absence of all signs of peritonitis and the presence of rupture of an organ like the spleen, without any history or signs of direct injury.

Removal of Tumor of the Orbit.—Dr. H. KNAPP presented a tumor of the orbit, which he had successfully removed from a patient. Death took place within two weeks, but could not be said to be due to the operation. The patient was aged thirty-six, pale and emaciated. During the war he contracted syphilis, which resulted in necrosis of a portion of the frontal bone. Two years ago he noticed that the right eye began to protrude, and one year ago the sight grew weak. When he came under the observation of Dr. Knapp the globe was apparently outside of the orbit, and with difficulty the lids could be made to cover it. Examined by the ophthalmoscope, the media were found clear, but the fundus showed a choked disk. When the eyeball was examined by the fingers, a soft, nodular tumor was detected at the inner part of the orbit. The globe moved only slightly, and was accompanied by pain. It was deemed advisable to endeavor to remove the tumor, and for this purpose an incision was carried through the lid and conjunctiva down to the mass. The tumor was then found to fill nearly the whole of the orbit. In the operation the internal rectus muscle was divided, also the optic nerve and accompanying vessels. The tumor was found to spring from the periosteum, and it was necessary to use the knife and gouge for its removal. While doing this the antrum was opened into. After the operation the inner side of the eye was destitute of sensation, but the outer side was still sensible. Examined by the ophthalmoscope, there was found to be some congestion of the veins remaining. For two or three days after the operation the patient did well, but at the end of that time gave some symptoms of uræmia. On the ninth and tenth days he did very well, but finally became comatose, and died on the thirteenth day. Albumen appeared in the urine during the last few days. On the outer half of the cornea an ulcer appeared on the third day, and extended downward and perforated on the eleventh or twelfth day after the operation. It was not possible to examine the eye by means of the ophthalmoscope until the last three or four days. After the operation the retinal circulation was never completely suspended, and this was explained by Dr. Knapp to be due to the fact that the return circulation from the posterior portion of the globe of the eye was not interfered with by the operation. Six days after the operation considerable hyperæmia of the disk was noticeable. A large amount of pus escaped from the wound after the operation.

Autopsy.—The brain, and even the optic commissure, was found normal. It was necessary, in deference to the requirements of the friends, to examine the orbit by cutting through the roof, and for that reason as free an investigation as was desirable could not be obtained. It was found, however, that the tumor sprang from the periosteum of the orbit. It was a sarcoma and was merely in contact with the optic nerve at the apex of the pyramid of the orbit. An examination by means of the microscope showed that the sarcoma-cells passed into the optic nerve and pressed forward between the nerve-fibres into the fundus of the eye, and in this manner gave rise to choked disk. Dr. Knapp said that this was the first case he had seen of a pseudo-plasm giving rise to choked disk, and an interesting feature of the case was that, while the disease passed interiorly into the eye, it did not pass posteriorly into the brain. The sheath of the optic nerve was only slightly involved; this was due to the fact that this form of disease makes most progress in soft tissues. The *liver* contained a hard, fibrous tumor, of the gummatous variety. The testicles were found to present evidences of syphilitic disease. The spleen was amyloid. The kidneys were in a state of acute croupous inflammation, and to this complication was attributed the death of the patient.

Tubular Cyst of Fallopian Tube.—Dr. NEWMAN presented the genitalia of a woman, with the following history: A Frenchwoman, thirty-two years of age, got an attack of metrorrhagia from exposure to cold during the summer of 1874. This lasted for fifteen months, and last November she came under the treatment of Dr. Newman. The cause of the bleeding was searched for by freely dilating the cervix of the uterus, but with no satisfactory results. The acetate of zinc was afterward applied to the uterus, by the advice of Dr. Fordyce Barker, and with the happiest results. Afterward the right leg became œdematous for a time, and this was followed by an attack of œdema in the left leg. The œdema eventually passed away, but marked anæmia continued. Dr. Barker saw her again last April. The patient became weaker and weaker, and the œdema again returned shortly afterward. She died suddenly.

Autopsy.—The right Fallopian tube contained a cyst due in all probability to salpingitis. Pelvic peritonitis was found, but no adhesions were noticeable on the intestines. Dr. Newman said that symptoms of pelvic peritonitis occurred only a few days before death, though from the *post-mortem* evidences it must have been present for an indefinite period. The patient menstruated some time before her death.

Diastasis, with Compound Fracture of Epiphysis of the Radius.—Dr. ERSKINE MASON presented two radii obtained from a boy under the following circumstances: The patient was twelve years of age, and entered Roosevelt Hospital after having received a fracture of the skull and injury to both wrists. On examining the wrists of the patient, it looked as if there was a Colles fracture, but on examining again after death it was found that there was compound fracture of the epiphysis, with diastasis of the radius and ulna on the left side, and the same condition on the right side. There was no dislocation of the ulna. Dr. Mason said that he was of opinion that diastasis of the radius might frequently be mistaken for Colles's fracture.

Intracapsular Fracture of the Neck of Femur.—Dr. MASON also presented the head and neck of the femur of a woman aged sixty. Twenty years previously she received an injury which resulted in intracapsular fracture. She entered hospital on January 26, 1876, with chronic meningitis, and died on April 14th. The neck of the femur was entirely gone, and the head rested loosely between the tuberosities.

Tubercular Disease of the Testicles.—Dr. LEALE presented the lungs of a patient, and completed the history, which he began five years ago, by exhibiting before the Society the testicles, removed on account of tubercular disease.

The man was thirty-nine years of age, and six years ago, while in the army, received an injury which forced his left testicle up into the inguinal region. After an effort of two hours it was reduced, but some weeks afterward both testicles became involved by disease. Much pain was experienced, and, on examining them, nodules were discovered. At the earnest request of the patient the left testicle was removed, and it was found that the gland-substance was completely replaced by a neoplasm. On the following week the right testicle was removed. The left testicle weighed six ounces, the right five ounces. Before the operation the patient was nearly dead from exhaustion, but in ten days afterward he was able to walk about. After completely recovering, the patient said he did not notice any difference in coition. A point of interest in regard to the case was the question of tubercles. Dr. AUSTIN FLINT asked, when the specimens were presented five years ago, if there were not tubercles in the lungs, as he thought it was rare for tubercles to make their first appearance in the testicles. It would seem, from the condition of the lungs which Dr. Leale presented, that Dr. Flint was correct in his surmise, though the health of the patient so greatly improved after the operation that he was enabled to act as trainer to Weston, the pedestrian. He eventually died from phthisis, and an examination o the lungs showed that they were extensively infiltrated with tubercles. The kidneys were also involved.

Retention of a Coin in the Intestines.—Dr. LEALE also presented a copper coin, which was swallowed by a child three and a half years old, and retained for seven weeks. Four days after being swallowed it was detected in the region of the cæcum, and for six weeks it would seem that it was delayed near the sphincter; but, inasmuch as the patient was not under the observation of Dr. Leale, he could not be certain.

Excision of Wrist-Joint.—Dr. BRIDDON presented the bones of the wrist which he had removed from a patient at the Presbyterian Hospital. The man was aged thirty-nine. On entering hospital the hand was found to be stiff, with only slight motion at the wrist-joint. An incision was made over the carpal bones, and the whole of the carpus, with the articular surfaces of the radius and ulna, was removed. The carpal bones were extensively eroded.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 20, 1876.

DR. E. R. PEASLEE, President.

The Spectroscope in Physiological Chemistry.—Dr. GEORGE B. FOWLER read a valuable paper on the above subject, giving an account of different spectra. He confined himself mainly to the changes which were induced in the blood-spectrum by deoxidation and other agents, and described also the spectra produced by bile and urine.

In answer to a question by Dr. Peaslee, he said he was unable to obtain any *luteine* spectra in the ovaries. Dr. Arnold said that in a large number of observations made upon the fluid of ovarian cysts, he also was unable to obtain any trace of luteine spectra.

After the reading of the paper, the different spectra were projected on the screen by means of the lime-light.

Bibliographical and Literary Notes.

ART. I.—*Clinical Lectures on Diseases of the Urinary Organs.* By Sir HENRY THOMPSON. Fourth edition: J. & A. Churchill, London, 1876. Pp. 378.

THE three editions which have preceded this one have made us all more or less familiar with the scope and aim of this work. Sir Henry gives us a collection of lectures illustrated by reference to cases occupying the wards or treated as out-door patients of the University College Hospital. Strictly speaking, only a few of them are clinical lectures, and the title serves mainly to indicate that the work is not a systematic text-book, but a collection of familiar and rather informal conversations upon the more important and common diseases of the regions involved. The author has a perfectly clear idea of the task he has set himself, and of the best way to accomplish it. He confines himself closely to a simple presentation of the results of his own large experience, and when these results differ from those obtained by others, or even by himself at other times, his only comment or explanation is, "My experience has been different," or "I have learned better." He justifies his methods solely by his experience, and makes no attempt to answer objections to them. He rarely alludes to other workers in the same field; makes little or no mention of methods or instruments which he himself does not use; is dogmatic and absolute in his statements, as is natural, perhaps, in a man occupying his position, and amid his surroundings; and, in short, exhibits the same qualities and the same manners which in his other books called forth so much opposition and hostile criticism.

The book, therefore, is far more likely to be useful to the practitioner—to the surgeon who is already practically familiar with the subject—than to the student or the recent graduate. The man who can justly claim to be *nullius addictus jurare in verba magistri* can gather much benefit from the great suggestiveness of the writer; while the helpless routinist, the man who does a thing because another has done it before him, will find more danger than profit in Sir Henry's teachings. Imagine the result of sending out the hosts of young men who are graduated by our schools every year armed with a silver catheter less than one millimetre in diameter (page 68), and taught that "it is exceedingly dull mechanical work to be constantly groping for a long time (for the orifice of a tight stricture)," (page 71). Such an instrument and such a fundamental idea would secure a progeny of false passages that would disgrace the profession; and it is singular that the author himself did not see, in the extreme delicacy of touch which he says is essential in the use of the instrument, a fatal objection to placing it in unskilled and untried hands.

Indeed, it may be said that his treatment of stricture is entirely opposed to that taught and practised in America, and, in fact, to that taught and practised by him a few years ago. The space at our disposal does not allow a detailed comparison of the methods and principles. A brief statement of those followed by the author will enable every reader to make that for himself. In the first place, he considers the normal calibre of the urethra not to exceed No. 13 or 14 (six and a half to seven millimetres in diameter) of the American scale, and he protests strongly against the disposition recently manifested in some quarters to treat the urethra as a tube of indefinite extensibility. He treats a moderate, tractable stricture, by passing steel sounds every third day. A resilient stricture is to be cut with Civiale's urethrotome, and a gum catheter tied in for two days. A stricture that is too tight to allow a No. 6 or 8 to pass easily is to be treated by "continuous dilatation," that is, by tying in a gum or silver catheter for two or three days, and repeating with a larger one until a fair calibre is obtained. A very tight stricture would be treated by tying in a very fine silver catheter, to be followed by others until a size of about No. 8 is reached, then cut with Civiale's urethrotome, No. 13 passed, and a large gum catheter tied in for three days.

As to what constitutes a stricture, he says of a patient (page 42) that "if No. 10 or 11" (12 or 13 American) "goes in easily—above all, if it is withdrawn without being held, and slides out with perfect facility—take my word for it he has no stricture, and, *quoad* obstruction, wants no use of instruments whatever." In his opinion, absorption of the tissue causing the stricture cannot take place, and a permanent cure is to be obtained only by complete division of all the fibres; if any are left uncut, recontraction is inevitable, and he makes this a fatal objection to the use of Maisonneuve's urethrotome, and to divulsion in most cases.

The subject of stricture occupies the first ninety-seven pages, and is followed by hypertrophy of the prostate, stone in the bladder, diseases of the bladder, and a supplementary lecture upon the examination of urine. Upon these subjects the authority of the writer cannot be questioned. The elaborate comparison of the merits of lithotomy and lithotrity, and the principles which he lays down as guides in the choice of an operation, are most valuable. He believes that stone in the bladder is an exterminable malady, and that the modern improvements in detecting and crushing small stones are, or will be, the means of demonstrating it. He cites sixty-three cases of small stones (as large as a small nut) which he crushed without causing a single death, the patients having a mean age of over sixty years, and two, or at most three, sittings being necessary in each case. By means of the improved searcher a stone as small as a pea can always be detected, and its removal with a lithotrite is not as much of an operation as the drawing of a tooth. Consequently, we have only to look for and detect stones when they are small to prevent them from ever endangering life; and there is every reason to believe that, by attention to well-marked indications, and the use of simple hygienic and therapeutic measures, the formation of even a small stone may be prevented. In this prophecy he has reference only to uric-acid or oxalate-of-lime calculi. Phosphatic stones are due to entirely different causes, and form a class by themselves.

In this connection he mentions a fact which is not generally known: stone in the bladder is common in poor children, but very rare in those of the well-to-do classes, and the reverse is true of adults.

The chapters upon these subjects are filled with valuable suggestions and details of manipulation, and everything is done to give the reader the benefit of the author's experience. Unfortunately, as he himself points out, another cannot profit by that experience until after he shall have accumulated some of his own; and many stones which Sir Henry Thompson could crush with safety, must, in the hands of a younger surgeon, be removed by lithotomy or let alone.

Among the more important points may be mentioned his objection to the expectant treatment, opium and hot baths, in retention of urine, and his decided preference for immediate action. Also, his recommendation to crush rapidly (with anæsthesia), in case cystitis sets in after removal by crushing has been commenced, instead of suspending operations and treating the complication: Also the fact that a drachm, or even half a drachm, of residual urine, may simulate a fragment left after lithotrity, may give rise to pain and irritation, and finally may form a nidus for the deposit of a phosphatic stone. His views as to the poisonous action of urine when passed over freshly-cut surfaces are rather vague, and his advice to tie in a catheter after any operation involving a solution of continuity in the urinary passages is robbed of much of its force by the admission (page 143) that urine always finds its way by the side of the catheter, along the urethra. In fact, this tying in of a catheter which he advises in all sorts of cases, is the most singular thing in the book, and a very noticeable contradiction of his own urgent instructions to use as little instrumentation in the urethra as possible.

In conclusion, the style is vigorous and bold, and, though the form is conversational, it is direct and to the point, with few repetitions, and free from all rhetorical ornamentation.

ART. II.—*An Elementary Treatise on Diseases of the Skin, for the Use of Students and Practitioners.* By HENRY G. PIFFARD, A. M., M. D., etc. 8vo, pp. 375. Macmillan & Co., London and New York, 1876.

IN reading this book one is struck by the meagreness of detail of certain portions of it, and by the considerable amplification of other portions; in the former the desire for brevity seriously cripples its usefulness to the student, but the more full parts are very readable, and present the matters in question clearly, in the main. While by no means so large as the hand-books of Neumann or Fox, it embraces an account of the ordinary diseases of the skin quite sufficient to enable the careful student to acquaint himself with their diagnosis and the general and special indications of treatment, which latter, as a rule, are judiciously given.

As in all other works, especially the first editions of young authors, there are many points open to very decided criticism, both as to fact and judgment. We will first compliment Dr. Piffard upon the very clear and able chapter relating to the "Anatomy of the Skin," largely adapted from Sappey, which gives the English reader, perhaps, the best description of it accessible, embracing as it does Neumann's work in addition to that of the great French anatomist; the beautiful plates and clear and complete descriptions of the latter have not before been given to English-speaking students.

The remarks in Chapter V., on "General Diagnosis," are excellent, but, in the matter of the "Classification of Diseases of the Skin," our author has, we believe, committed an error calculated in the end to confuse the subject and to impair greatly the usefulness of the book. Following the French school, he attempts an *etiological* classification, a basis which has always failed, and must fail, in the present ever-changing state of our knowledge. His classes are: 1. Diathetic Affections; 2. General Non-Diathetic Affections; 3. Reflex Affections; 4. Local Affections; 5. Affections of Uncertain Nature. Under diathetic affections he places syphilides, scrofulides, rheumides, leprosy, and ichthyosis. The term "rheumides," newly coined to represent the French *dartres* or hepetides, includes eczema, psoriasis, and pityriasis.

Under "Reflex Affections" he places acne alongside of zoster and urticaria—a most unwarranted position, as it appears to us. The "Local Affections" embrace those due to animal and vegetable parasites, and certain "non-parasitic *local affections*," *including furuncles*. But the weakness of this classification is shown still more strongly in the fifth class of "Affections of Uncertain Nature," under which are grouped a host of diseases as unlike as can be imagined, and whose very presence thus associated demonstrates either that this principle of classification cannot stand, or that the previous four groups are wrongly constructed. An alphabetical arrangement of the various diseases of the skin, as adopted by Cazenave in one of his works, appears almost preferable, as less confusing to those little acquainted with the subject.

We cannot but regret that Dr. Piffard has seen fit to add also to the confusion of nomenclature, by the introduction of the words "rheumide" and "rheumic diathesis," by the resuscitation of the term "trichophytosis" in place of the more feasible "tinea," which has already gained wide acceptance, to represent the vegetable parasitic disease ringworm, and also the word "phytosis versicolor" for the "tinea versicolor," etc. With the liberties taken by each new author, dermatology, always a confusing field to those little acquainted with it, will soon become hopelessly entangled, and nothing short of a total destruction of every copy of every book on the subject can be expected to allow the clear light of judgment to appear.

A very serious point in the work under consideration, and which demands criticism, as it cannot meet with acceptance everywhere, is the treatment of the subject of the "scrofulides;" or, as we would prefer, *scrofuloderma*, a more scientific name, corresponding to the already-accepted scleroderma, leucoderma, syphiloderma, etc. Our author confounds, or, more charitably, treats as the same disease, what is commonly known as lupus in its ordinary forms, and the disease which Paget, Moore, Hutchinson, Fox, and others, have called rodent ulcer, and recognized as a very localized form of epithelioma. This is evident from his descriptions of "the scrofulides," and is also avowed on pages 100 and 122. We cannot here go into the clinical or microscopical evidences belonging to the question, which are ably set forth by others, but must protest against such an unwarranted and unproved confounding of diseases and processes, utterly dissimilar in their every feature. Epithelioma of the skin is not treated of at all in this book, and we are led to infer that cases of this disease are included also under his "ulcerative tubercular scrofulide;" this supposition is further supported by the advice given to excise small localized lupous patches, a plan of treatment quite at variance with the teachings of others in regard to true lupus, and of dubious value in consideration of the great tendency to the development of new tubercles near an already-existing lupus-disease. We wish the author had dwelt more upon the galvano-caustic treatment of lupus, which has met with such great success in many quarters.

Space forbids entering more in detail into this work, which demands notice as being the first real American treatise on diseases of the skin which has appeared for a long time. We welcome it as an expression of opinion from the American school of dermatology, but are constrained to assert that, in many points, Dr. Piffard does not represent this school in all its bearings, and that much dissent will be found among those engaged in dermatological practice in this country in regard to many of his expressions in regard to theory and practice.

The book, notwithstanding the etiological basis of its classification, has the solid foundation of pathological anatomy, very many plates being taken from Neumann, Kaposi, Biesiadecki, and other well-known workers in dermatology. We regret that no drawings are given of the fungus of the vegetable parasitic diseases of the skin; for, frequently, the microscope alone can determine their nature, and the student here has no guide for the appearances which he is to look for under the microscope.

A new feature in the book is the presentation of five photomicrographic plates, taken from sections of the normal finger-nail, lupus, acne rosacea, elephantiasis Arabum, and keloid. Some of these represent the diseased structures fairly; but, in our opinion, for teaching purposes are inferior to good microscopic drawings, it being impossible to give in this way clear outlines of the elements of the part.

The mechanical execution of the book is most admirable, the paper and presswork being excellent. It is printed in very large type, heavily leaded, there being also much blank space at the ends of sections, all diminishing very greatly the amount of text. The index is fair, but would be much more satisfactory if twice as full.

ART. III.—*On Certain Endemic Skin and other Diseases of India and Hot Climates generally.* By TILBURY FOX, M. D., and T. FARQUHAR, M. D. London: J. & A. Churchill, 1876.

THIS volume consists of a digest of reports which have been received by the authors from various medical officers in the English colonial service, which reports were answers to questions proposed in a circular scheme prepared by Drs. Fox and Farquhar, and distributed throughout the British colonies, under the direction of the government.

The affections considered embrace many that are well known in Europe and this country, and in addition certain others peculiar to the countries from which the reports come. The more important of these peculiar diseases are, frambœsia, Delhi boil, Biskra-button, Aleppo evil, parangi, ainhum, mycetoma, Malabar itch, Burmese ringworm, Dhobie itch, etc.

The reports are from the pens of intelligent observers, familiar with the various diseases in their special localities, and the compilation has been made by men peculiarly fitted for the task. Such being the case, we have a right to expect a very important and solid contribution to our at present limited knowledge of the subjects embraced. In this we are not disappointed.

First, as to frambœsia: this appears to be a disease, *sui generis*, specially prevalent among the black races in Africa and the West Indies, but unknown in India and China. It is characterized by the appearance upon the skin of small, flat spots of a yellow or brownish-red color, which subsequently develop into tubercles, from which the cuticle may separate, exposing a yellowish, spongy surface, exuding a thin, fetid fluid. The tubercles may increase until they attain a diameter of an inch or more, with an exuding, fungous surface. Later they begin to shrink, the discharge ceases, a yellow scab forms and dries, until finally it drops off, leaving an indelible mark upon the skin. The disease may last from a few weeks to several years. In the opinion of the reporters it has no connection with syphilis. Mercury, however, and iodide of potassium are of decided service in the treatment, which is usually effective if commenced in season.

The authors reaffirm previously-expressed opinions,[1] that Delhi boil, Biskra, Aleppo, and Cretan buttons, are identical diseases. That the last three are the same disease, appears to the writer to admit of little doubt, and the Delhi sore may be the same affection modified by the Indian climate, etc., but this can hardly as yet be considered as clearly proved. The most valuable information concerning the Mediterranean diseases is derived from the researches of Dr. Vandyke Carter, who visited their haunts in person, and, aided by the resident practitioners, was enabled to determine the following facts: The Biskra and other "buttons" commence as small tubercles, which in a short time exhibit a minute scale upon their summits, changing in time into a crust, underneath which lies an ulcer, sometimes progressing in a serpiginous manner. The affection may last for six months or a year, and then disappear spontaneously. It appears to be contagious, and to be influenced very little by treatment. Dr. Carter contributes four chromos illustrating different stages of the eruption, and a plate delineating the microscopical appearances. The former suggest syphilis, and the latter certain forms of lupus. Geber has recently declared (*Vierteljschft. f. Derm. u. Syph.*, 1875) that the disease is syphilis, but a careful consideration of the clinical history, as detailed by Carter and the resident observers, clearly negatives this view. One affection, however, which the authors have allied to the "button," namely, the parangi disease of Ceylon, is certainly syphilis, or its counterfeit.

"Ainhum" is a curious affection, met with in certain parts of India, and affecting by preference the small toes. It commences as an hypertrophy of the distal portion of the toe, with atrophy near its proximal extremity, leading finally to complete severance of the member. Its cause is unknown.

Mycetoma receives considerable attention; but little of value is added to the previously-published researches of Carter upon the subject.

Burmese ringworm, Dhobie itch, etc., are unquestionably trichophytosis, rendered more luxuriant by climatic conditions. It appears to exhibit a special predilection for the genito-crural region. The reporters, however, make no mention of its occurrence upon the heads of children, the locality which it specially ravages in this country and in Europe. The value of Goa powder in the treatment of this affection is specially noticed.

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[1] Fox, "Skin Diseases," third edition, London, 1873.

"Malabar itch" appears to be an exaggerated scabies, something like the *scabies Norvegica* of Boeck, and in certain Indian districts is even more prevalent than in Scotland, long reputed to be the favorite home of the *Acarus scabiei*. India must now claim precedence in this respect.

The reports upon elephantiasis Arabum occupy ninety pages of the volume, and contain a great deal of interesting, new, and valuable matter.

Certain affections well known in Europe and America, as keloid, fibroma, pityriasis versicolor, etc., are noticed, but the Eastern contributions have not added much to the information already possessed concerning them.

An outline map of India and China, and of the Mediterranean coasts, with the stations from which the reports came marked thereon, would have greatly facilitated a comprehensive appreciation of the distribution of the various affections. With this exception, nothing but praise can be awarded the authors who devised the "scheme" which has resulted in the collection of so many useful contributions to dermatology.

Art. IV.—*Vital Motion as a Mode of Physical Motion.* By Charles Bland Radcliffe. London: Macmillan & Co., 1876. Pp. 252.

Twenty-five years ago Dr. Radcliffe was present at an experiment upon a rabbit, and was surprised to find that the muscular spasm, induced by subcutaneous injection of strychnia, continued four days after death, and that the muscles did not relax until after putrefaction had set in.

Later, the temporal artery was divided in an epileptic patient during a paroxysm, and the blood, although escaping in jets, was black; venous, not arterial.

Again, while studying with Matteucci the action of strychnia upon the electric ray, he observed that involuntary electric shocks accompanied the spasms caused by the poison, and was much impressed with the theory of this physiologist in regard to the influence of static charges on muscular movements.

To these three facts may be ascribed his researches and subsequent convictions, which led to the publication of "Philosophy of Vital Motion" (1851), "Dynamics of Nerve and Muscle" (1871), and the book before us. Although we cannot agree with Dr. Radcliffe in his philosophy of animal currents, and the laws of muscular contraction, we must thank him for his clearness of diction and fascinating style. There can be no doubt about his meaning; there is nothing pretentious in his claims or manner of making them.

Space will not permit us to review in detail all that is presented in support of his views on these important matters. Among the many subjects of physiological interest to which he applies his theory, those which draw our attention most forcibly are the following: 1. Animal electricity; 2. Action of so-called "direct" and "inverse" voltaic currents upon muscle and nerve.

Experimenting with the quadrant-electrometer, the presence of static charges, positive or negative, as the case may be, is readily detected in both muscle and nerve. The longitudinal surface has a positive, the transverse surface a negative charge.

These charges of free static electricity may, according to our author, not only govern muscular contraction and relaxation, account for the animal currents of Du Bois-Reymond, and the phenomenon, "Negative Variation," but also explain the polar action of electricity when it is applied to muscle and nerve.

The following considerations occur to us as conclusive in reply: We possess two instruments, chiefly used in physiology, to detect the two manifestations of electricity, called static and current. One is the galvanometer, the other the electrometer. The former is a test-instrument for the presence of a continuous current; the latter for the presence of a charge of free positive or negative electricity called static. Electricity which moves the mirror of the galvanometer is called a current, and that which moves the electrometer mirror is called static. These are the facts.

Now, with only one pole of a voltaic cell attached to the electrometer, we have a deflection of the mirror indicating a charge of static electricity; but the same pole, connected alone with one end of the coil of wire of the most delicate galvanometer, will have no effect upon the mirror, even when all the apparatus is insulated.

Charges from an electric machine move the galvanometer mirror, because the mass of surrounding wire is charged; but a single pole from a voltaic cell will not charge it. The difference between a current and a charge seems, therefore, sufficiently plain, although the reader will not find the distinction rightly made by Dr. Radcliffe. With the above facts in mind, it will appear that, to claim for static charges the production of the muscular current, e. g., is just like claiming the same thing for a voltaic element. It follows that electro-tonic movements of the needle (galvanometer) cannot be due (as proposed by Dr. Radcliffe) to a *portion* of the free electricity passing from one pole of the voltaic circuit along the nerve into the galvanometer circuit, because the whole of this free electricity from a single pole does not furnish a sufficient charge to deflect the mirror of this instrument. We shall continue, then, to hold to the expression, "voltaic current," in spite of the fact that a single pole can deflect an electrometer mirror; and also to the expression, "muscular current," in spite of the fact that a static charge can be detected here also by the same instrument. Again, in regard to the modifications in the condition of nerve and muscle induced by electricity, we fail to find in this work much help to a right understanding of Pflüger's laws. The fact is, that these laws are not modified by insulation of the frog-preparation. If the whole muscle be surrounded by water, and the liquid be connected by a wire to the earth, there is still no modification in these laws. Their explanation is not to be found, therefore, in the action of nerve-force on static charges in the muscle, for these static charges cannot exist in the muscle when the above connection with the earth is made. The truth is probably to be found somewhere between the two extremes of this controversy. The advocates of the current view, i. e., that a current is always circulating, admit the presence of these static charges, but hold, and, as we think, correctly, that they are totally insufficient to account for facts, while the other side err in claiming too much for them. A similar division in opinion exists about the molecular hypothesis of Du Bois-Reymond. Quite a number of the leading physiologists of the day consider the muscular and animal currents as *chemical* phenomena, not *physical*. We confess our inability to see any difference between chemical and physical molecules, and, were all physiologists to agree in calling these phenomena "chemical," the polar-molecule hypothesis of Du Bois-Reymond would seem to us to lose nothing, and hardly to require a change of name.

If a muscle be a Leyden-jar, so is a voltaic cell.

If molecular motion in nerve and muscle be chemical, why is not the same motion in a magnet chemical? In one sense, both are chemical and physical. Notwithstanding the pleasure we have taken in reading "Vital Motion as a Mode of Physical Motion," we can see no reason for believing that the continuous violent shortening of a muscle in tetanus, *rigor mortis*, or during prolonged voluntary action, is due to the liberation of free electricity existing in its sheaths in a state of charge.

ART. V.—*Clinique Chirurgicale de l'Hôpital de la Charité.* By L. GOSSELIN, Clinical Professor of Surgery in the Faculty of Medicine at Paris, etc., etc. J. B. Baillière et Fils. 2 vols., pp. 1455.

THIS book, as its title shows, is a collection of lectures delivered at La Charité Hospital by the clinical Professor of Surgery.

Prof. Gosselin, who succeeded Velpeau about eight years ago—Alexander on the throne of Philip—stands beyond question at the head of the French surgeons of his time. His lecture-room and his wards are familiar to every physician, native or foreign, who visits Paris, and this book will be heartily welcomed by all who have wished to possess in a permanent form the record of the author's experience and study. Its chief value, the one which makes it so useful to the young practitioner and the earnest student, lies in its clinical form. In this respect it is without a rival in its own language, and without even a competitor in ours.

A few of the lectures are purely scientific, as, for instance, those upon the consolidation of fractures, and septicæmia, but the author's general plan is to take some patient for the subject of his lecture, and, using him as text and illustration, to discuss the etiology, symptomatology, diagnosis, and treatment, of the affection from which he suffers. The subjects thus treated are necessarily few in number, but they are those which the general practitioner is most likely to meet with, and the information given is of a kind which no text-book offers, and which the young surgeon finds most useful, for it supplies the experience which he lacks.

Especial attention is given to diagnosis and treatment, all the manipulations and apparatus needed for the one or the other being minutely described.

A translation of selected portions is already announced, but the whole work is well worth study.

ART. VI. — *Transactions of the American Neurological Association for* 1875. Edited by F. P. KINNICUTT, M. D., and T. A. McBRIDE, M. D. Vol. I. 8vo, pp. 257. New York, 1875.

IT is a matter for congratulation that a number of physicians especially interested in the diseases of the nervous system have formed a society, the membership of which is limited to fifty, for the advancement of knowledge in that direction. This volume contains the proceedings of the first meeting of the Society, held in New York, in June, 1875.

The "Proceedings" occupy something over twenty pages, and give a very good epitome of the addresses and discussions. In addition, the volume contains a number of quite interesting papers, the most elaborate of which is by Dr. H. D. Schmidt, of New Orleans, "On the Structure of the Nervous

Tissues, and their Mode of Action." The entire article, in two parts, covers seventy pages. In the part on the structure of the nervous tissues the description of the nervous system of the fœtus is especially interesting. Dr. Schmidt has already acquired some celebrity as an original investigator, and the present article will add to the favorable opinions already entertained. His account of the action of the tissues is very interesting and valuable, and leaves the impression that the author is quite materialistic in his views.

We trust that the transactions of future meetings of the Society will prove to be as interesting as is the volume before us.

Art. VII.—*Extract from the Ninth Annual Report of the State Board of Charities of the State of New York, relating to the Bearings of the Sanitary Condition of Towns, and the Crowding of Population into Filthy, Ill-ventilated, and Badly-drained Tenement-Houses, upon the Increase of Pauperism.* By H. L. Hoguet and A. A. Low, Commissioners. Transmitted to the Legislature January 14, 1876. 8vo, pp. 32. Albany: Weed, Parsons & Co., 1876.

The State Board of Charities, at a meeting held in Albany on the 6th of April, 1875, appointed Commissioners Hoguet and Low to consider the questions which constitute the title of the present pamphlet. These gentlemen employed Dr. A. N. Bell, of New York, to aid in the undertaking. It is the report of Dr. Bell to the commissioners which constitutes the substance of this volume.

It shows, in a very clear manner, the relationship between improper sanitary measures and sickness and death, and between such conditions and poverty. We hope it may be extensively read by the people.

Art. VIII.—*First Annual Report of the Board of Health of the State of Georgia, for the Year ending October* 12, 1875. 8vo, pp. 215. Atlanta, 1876.

We are glad to see so good a volume the result of the efforts of the Georgia Board of Health.

The "Preliminary Report," by Dr. Henry F. Campbell, is followed by articles as follows: "Report of Committee on the Hygiene of Schools," by C. B. Nottingham, M. D.; another shorter article on the same subject, by F. A. Stamford, M. D.; "Report of Committee on the Influence of Trees on Health," by Benjamin M. Cromwell, M. D.; "Report of Committee on Sale of Poisons and other Articles detrimental to Health," by F. A. Stamford, M. D.; "Prisons," by Dr. George F. Cooper; and "Report of Special Committee upon the most effectual Means of preventing Small-pox in Georgia," by Dr. Joseph P. Logan.

Many excellent points are brought out in these articles which we have not space to notice.

ART. IX.—*The Clinical Thermoscope, and Uniformity of Means of Observation. Two Notes.* By EDWARD SEGUIN, M. D. 8vo, pp. 8. New York: G. P. Putnam's Sons, 1875.

IN the former of these two articles the author describes his thermoscope, and claims for it more precision in diagnosis than is attainable with the thermometer.

The latter article was read to the American Medical Association, including a resolution to choose delegates to "advocate in Europe the unity of clinical observation, and charge them to report in brief at the next meeting, in 1876." In obedience to this resolution, delegates were chosen to the International Medical Convention at Brussels.

ART. X.—*The Climate and Diseases of America.* By Dr. JOHANN DAVID SCHOEPFF, Surgeon of the Anspach-Bayreuth Troops in America. Translated by James Read Chadwick, M. A., M. D. 8vo, pp. 31.

THE body of this volume is composed of letters written by the author, during the Revolutionary War, to Prof. Delius, of Erlangen. They were discovered by the translator, who has introduced them to the American reader, with notes, and an "Introduction," giving a short history of the German expedition.

The letters are interesting as showing the views entertained at that time (1780), but may be viewed more in the light of a curiosity than as a valuable contribution to our knowledge.

ART. XI.—*The Sanitary Condition of Boston. The Report of a Medical Commission, consisting of* CHARLES E. BUCKINGHAM, M. D., CALVIN ELLIS, M. D., RICHARD M. HODGES, M. D., SAMUEL A. GREEN, M. D., and THOMAS B. CURTIS, M. D. 8vo, pp. 199. Boston: Rockwell & Churchill, 1875.

THE high rate of mortality in the city of Boston during the years 1872 and 1873 instigated the appointment of the above-named committee "by the Board of Health of the city of Boston, to investigate the sanitary condition of the city."

The discussions will prove of value to the reader, the suggestions being in accord with well-known hygienic principles.

ART. XII.—*Filth-Diseases and their Prevention.* By JOHN SIMON, M. D., F. R. C. S., etc. First American edition. 12mo, pp. 96. Boston: James Campbell, 1876.

IN calling the attention of the profession to this excellent essay of Dr. Simon, it is only necessary to reiterate the statement of the members of the State Board of Health of Massachusetts, under whose direction it is presented:

"If the practical suggestions made therein were acted on by all citizens, hundreds of lives now annually doomed to destruction would be saved, and the health and comfort of the people greatly increased."

ART. XIII.—*Manitou, Colorado, U. S. A., its Mineral Waters and Climate.* By S. EDWIN SOLLY, M. R. C. S., etc. 8vo, pp. 40. St. Louis: John McKittrick & Co., 1875.

THE author gives an analysis of the water found at Manitou, and also a glowing description of the place and surrounding country. Phthisis seems to be the disease most favorably affected by the climate, etc., but much is claimed for nervous and other chronic affections.

ART. XIV.—*Transactions of the American Otological Society.* Eighth Annual Meeting, July 21, 1875. Vol. II., Part I. 8vo, pp. 97. Boston: James Campbell, 1875.

THIS pamphlet, in addition to the "Report on the Progress of Otology," by Drs. Blake and Mathewson, which seems very complete, contains several able papers by different authors relating to affections of the ear. These will all prove of value to those interested in otology, and some of them may be of interest to the general practitioner.

ART. XV.—*The Relations of the Nervous System to Diseases of the Skin.* Parts I. and II. By L. DUNCAN BULKLEY, A. M., M. D., etc. 8vo, pp. 45.

DR. BULKLEY explains the intimate connection between the minute nerve-terminations and the cells of the rete Malpighii, thereby being able to show how nerve-irritation occurring from any source may induce certain pathological conditions in the skin. Sound principles for therapeutical action are suggested.

ART. XVI.—*Twentieth Annual Report of the Trustees of the State Lunatic Hospital at Northampton.* October, 1875. Boston: Wright & Potter, 1876.

THIS report, made by Pliny Earle, M. D., the superintendent, shows that in the management of the affairs of the hospital the endeavor "to produce the largest possible results of good, both present and permanent," has been quite successful.

ART. XVII.—*Near Sight treated by Atropia; with Tables.* By HASKET DERBY, M. D., etc. 8vo, pp. 8. New York, 1875.

THE contents of this pamphlet were read before the American Ophthalmological Society, in July, 1874. The author advocates the employment of atropine in certain cases of short sight, and his eight plates, giving a tabulated view of thirty-six cases, seem in a measure to support his claims.

Art. XVIII.—*Massage in Amenorrhœa and Dysmenorrhœa.* By Douglas Graham, M. D. 8vo, pp. 7. Reprinted from the *Boston Medical and Surgical Journal*, February 10, 1876.

Five cases are reported in which massage, or a manipulation of the whole body, was employed, in some of them with apparent advantage.

Art. XIX.—*Observations upon Two Cases of Fibroma Molluscum.* By J. E. Atkinson, M. D., etc. 8vo, pp. 12. New York: D. Appleton & Co., 1875.

As this pamphlet is reprinted from the New York Medical Journal of last December, it is presumed our readers are familiar with its contents—or at least should be.

Thirty-second Report to the Legislature of Massachusetts relating to the Registry and Return of Births, Marriages, and Deaths, in the Commonwealth. For the Year ending December 31, 1873. 8vo, pp. x.–80–clxi. 1875.

Thirty-third Report. . . . For the Year ending December 31, 1874. 8vo, pp. viii.–80–clxii. Prepared under the direction of the Secretary of the Commonwealth. With Editorial Remarks. By F. W. Draper, M. D., etc. Boston: Wright & Potter, 1876.

These reports, like their predecessors, are exceedingly valuable as statistical documents, but are not of such a character as to elicit an abstract without occupying too much space.

Books and Pamphlets Received.—Résumé of the Transactions of the International Medical Congress at Brussels, 1875. By George W. Wells, M. D. Reprinted from the *St. Louis Medical Journal*.

Lectures on Orthopedic Surgery and Diseases of the Joints, delivered at Bellevue Hospital Medical College, during the Winter Session of 1874–'75.

By Lewis A. Sayre, M. D., Professor of Orthopedic Surgery, Fractures and Dislocations, and Clinical Surgery, in Bellevue Hospital Medical College, Surgeon to Bellevue Hospital, etc., etc. Illustrated by Two Hundred and Seventy-four Wood Engravings. New York: D. Appleton & Co., 1876.

The Pathology and Treatment of Childbed: A Treatise for Physicians and Students. By Dr. F. Winckel, formerly Professor and Director of the Gynæcological Clinic of Rostock. From the second German edition, with many Additional Notes by the author. Translated by James R. Chadwick, M. D., Clinical Lecturer on Diseases of Women, Harvard University. Philadelphia: Henry C. Lea, 1876.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M. D., London, Fellow of the College of Physicians, London, etc., etc. Second American, from the third revised and enlarged English edition. Illustrated by One Hundred and Eleven Engravings on Wood. Philadelphia: Henry C. Lea, 1876.

De la Valeur de l'Hystérotomie dans le Traitement des Tumeurs fibreuses de l'Uterus. Thèse présentée au Concours pour l'Agrégation (Section de Chirurgie et d'Accouchements), et soutenue à la Faculté de Médecine de Paris, par le Dr. Samuel Pozzi, ancien Aide d'Anatomie à la Faculté de Médecine de Paris, etc., etc. Paris: G. Masson, 1875.

On some Practical Points in the Treatment of those Forms of Eye-Disease of most Frequent Occurrence in General Practice. Also a Brief Report of Cases of Sympathetic Ophthalmia and Sympathetic Irritation. By A. M. Rosebrugh, M. D., Surgeon to the Toronto Eye and Ear Infirmary.

Remarks on Urethral Stricture, before the British Medical Association, August 5, 1875. By Fessenden N. Otis, M. D., etc. Reprinted from the *British Medical Journal*, February 26, 1876.

A Series of American Clinical Lectures. Edited by E. C. Seguin, M. D. Vol. II., No. III. The Treatment of Mild Cases of Melancholia at Home. By E. C. Seguin, M. D. New York: G. P. Putnam's Sons, 1876.

The Treatment of Chronic Eczema by Glycerole of Subacetate of Lead. By Balmanno Squire, M. B., London. Reprinted from the *Medical Times and Gazette*, March 18 and 25, 1876.

Transactions of the Obstetrical Society of London. Vol. XVII. For the Year 1875. With a List of Officers, Fellows, etc. London: Longmans, Green & Co., 1876.

An Elementary Treatise on Diseases of the Skin. By Henry G. Piffard, M. D., Professor of Dermatology in the University Medical College. New York and London: Macmillan & Co., 1876.

Hydroadipsia, and the Water-Supply of Living Bodies, clinically illustrated. By Z. Collins McElroy, M. D., Zanesville, Ohio. Reprint from the *Lancet and Observer*, May, 1876.

Dispensaries: Their Origin, Progress, and Efficiency. By the Rev. W. S. Ludlum, A. M. Sold for the benefit of St. John's Guild. New York: G. P. Putnam's Sons.

A Treatise on the Hot Sulphur Springs of El Paso de Robles, San Luis Obispo County, California. By E. Malcolm Morse, M. D. San Francisco. Pp. 39.

Twenty-second Annual Report of the New York Infirmary for Women and Children. For the Year 1875.

Ninth Annual Report of the Board of Health to the City Council of the City of Dayton, Ohio. For the Year ending February 29, 1876.

Sixty-second Annual Report of the Trustees of the Massachusetts General Hospital, 1875.

The British and Foreign Medico-Chirurgical Review and Quarterly Journal of Practical Medicine and Surgery. No. CXIV., April, 1876.

Revue des Sciences Médicales en France et à l'étranger. Tome VII. Paris: G. Masson, 1876.

Transactions of the New York Odontological Society. Regular Meeting, Extra Session, December 20, 21, 1875. Philadelphia: S. S. White, 1876.

The Journal of Anatomy and Physiology. Vol. X., Part III., April, 1876. Macmillan & Co.

Eighth Annual Report, with the Constitution, Act of Incorporation, and List of Subscribers of the Toronto Eye and Ear Infirmary.

Mental and Nervous Disorders. By D. A. Morse, M. D. Reprinted from the *Cincinnati Lancet and Observer*.

Prospectus of the College of Pharmacy of the City of New York.

Transactions of the State Medical Society of Arkansas, 1875-'76.

Announcement and Catalogue of the Detroit Medical College, 1876-'77.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. E. H. BRADFORD, EDWARD FRANKEL, AND GEORGE R. CUTTER.

SURGERY.

The Adduction Perspective.—Dr. J. Hock (*Wiener Med. Presse*, Nos. 40, 41, 1875) explains the reason why the eyes become fatigued by a prolonged use of ordinary opera-glasses. The opera-glass consists of two Galilean telescopes in which the distance of the object glass from the ocular can be changed by means of a screw windlass. The objective is a convex glass of greater, and the ocular a concave glass of less, focus; both glasses give an upright virtual image. The distance of the glasses from each other varies according as the observer is emmetropic or otherwise. For all refractional accommodation of the eye the bulbs are compelled, by the position of the tubes, to assume a parallel direction, but the equilibrium of the internal and external muscles differs according to the individual refraction, therefore the external recti are too severely taxed, and a peculiar sensation of fatigue is soon felt. In addition to this, the distance between the tubes is generally greater than that between the pupils of the eye, hence the eyes do not see through the centres of the concave oculars, but through the inner borders. This has the same effect as looking through prisms with their refracting angles outward, and burdens the external recti muscles still more.

By an "abduction perspective" Dr. Hock means an opera-glass in which the visual lines are changed from their parallel to a convergent direction. This is accomplished by grinding the concave oculars on prisms set in the instrument with their refractory edge outward. Myopes use the weakest, hypermetropes the strongest prisms. Waldstein, the optician, of Vienna, has made such glasses with prisms of one, two, and three degrees. Those of two degrees are best for emmetropes.—*Schmidt's Jarbücher*, No. 1, 1876. G. R. C.

Dislocation of the Symphysis Pubis.—M. Gallez reports this rare accident: A man, aged thirty-five, attempted to throw a piece of iron weighing one hundred and sixty pounds; his left foot slipped, causing an energetic contraction of the abductor muscles. The tumor of the pubis was found to be lower than normal, the left spine of the pubis was a finger's breadth lower than the right. The posterior border of the articular surface lay in front of the anterior face of the descending ramus of the right pubic bone. There was no ecchymosis nor pain, nor derangement of the bladder.

Dislocation of the Xyphoid Appendix.—A man, aged fifty-three, stooping to pick a piece of coke, slipped and fell, striking his chest against the edge of the box in which the coke was kept. A small tumor formed below the sternum. On examination this was found to be the xyphoid cartilage; it was replaced with a snap, on manipulation, but could not be retained in position.—*Gaz. Hebd.*, March, 1876. E. H. B.

Injection of Air into the Bowel for the Relief of Strangulated Hernia.—Dr. Moritz Egger reports the following case in the *Med.-Chir. Centralblatt*, No. 4, 1876: He was called last July to see a female, seventy-nine years old, who was found in bed, suffering from intense abdominal pain, and with knees drawn up. She stated that, up to the present illness, she had always enjoyed good health, but that three days before, while at work in the field, she suddenly experienced abdominal pain which gradually increased to such a degree at night that assistance had to be called. She had had no passage since the commencement of the attack. The patient presented all the symptoms of intestinal strangulation, with nausea, and the anxious expression of countenance, and on examination a tumor about the size of a hen's-egg was found at the site of the right inguinal canal. After giving morphine internally and making warm applications externally, and after an enema, taxis was repeatedly tried without success. The patient refusing an operation, taxis was again tried ineffectually on the following day, when the patient was almost collapsed, and stercoraceous vomiting had set in. The author then introduced a long elastic tube into the rectum as far as it would go, and began to inject air slowly. After a time, the intestinal coils could be seen through the very thin abdominal walls to become distended, and suddenly a peculiar rolling noise, as if the air had overcome an obstruction, was heard, after which the hernia was discovered to have disappeared. Air was then allowed to escape from the tube, and the

latter was gradually removed. Half an hour later the patient had a large stool, and then slept; five days afterward she had entirely recovered.
E. F.

THEORY AND PRACTICE.

A Case of Addison's Disease.—The *Lyon Médicale*, No. 43, 1876, copies from the *Gazette Médicale* a case reported by M. Lahilonne at the Congress at Brussels as having occurred in the practice of Prof. Semmola, of Naples. It was that of a patient who had contracted malarial cachexia during hunting in marshy places. From this he recovered after change of climate and resort to therapeutic measures. A short time afterward, however, his strength began to fail, and his complexion became completely bronzed. At the end of last March the characteristic coloration had spread to the back and to the epigastric region; deposits of pigment were seen within the mouth, on the gums; there was general asthenia, the debility being so great that the patient could not raise his head. The pulse was hardly perceptible, the temperature 95°, with a permanent sensation of cold. Considerable gastric disturbance, with uncontrollable vomiting; urine pale, containing 150 grains of urea daily; no neuralgic pains. In view of this array of symptoms, Semmola made the diagnosis of a paralysis of the trophic apparatus (great sympathetic), and had recourse to the constant current applied from the nape of the neck to the lumbar region. There was no amelioration of these symptoms from this treatment at the end of five days. One pole was then placed to the neck and the other to the epigastric region, after which the vomiting ceased. The current was applied every twelve hours, and the gastric disturbance gradually disappeared. Sulphate of strychnia up to 8 mmgr. p. d. and iodide of potassium 1 grm. p. d. were also given. The sensation of cold disappeared, and the relief was signalized by a cutaneous desquamation. At present the patient eats one kilogramme of meat every day, rides horseback three hours, and only retains an icteric coloration of the skin to remind him of his illness.—In the discussion M. Markowitz remarked that the array of symptoms was probably not due to an alteration of the supra-renal capsules. All diseases attended with a rapid cachexia, the paludal fevers among others, could conduce to a hyper-pigmentation of the skin. M. Semmola replied that there was no splenic humor, and besides that, to-day, the alteration of the capsules is not considered the fundamental cause; that the tendency is rather to admit an alteration in the functions of the great sympathetic dependent on the syphilitic virus, miasm, etc. E. F.

Arsenic in Diabetes.—S. V. Pap (*Wiener Med. Presse*, Nos. 13, 14, (1875) gives his experience concerning the therapeutics of diabetes mellitus, as follows: 1. Arsenic appears, in most cases, to exert a beneficial effect, which consists in this, that the pathological secretion of sugar is considerably diminished; in many cases, indeed, it entirely disappears. Naturally, as a result of this, all the other symptoms of diabetes, such as thirst, dryness in the mouth, quantity of urine, depression, etc., are improved. 2. The beneficial influence of the use of arsenic is manifested in the lighter forms more rapidly, certainly, and distinctly, than in the more severe forms, with a greater proportion of sugar than four per cent. In the former, the sugar may entirely disappear, which is but rarely the case in the latter. 3. The diminution or the disappearance of the sugar secretion also takes place with a mixed diet. The maxim remains undisputed, however, that the amylaceous foods should, at least temporarily, be limited as far as possible. 4. After the cessation of the use of arsenic months may pass before the disease again returns. One is not secure, however, from relapses. 5. Unpleasant or injurious effects of arsenic were not observed. The appetite was not affected; it was rather improved in many cases. 6. As a contraindication, one might cite the highest degree of the disease with advanced tuberculosis of the lungs.—*Vierteljahrschrift für die prakt. Heilkunde*, Bd. 1, 1876. G. R. C.

Tænia.—M. Roger has collected a number of clinical facts showing the influence of the use of raw meat on the development of tænia. He finds that *Tænia mediocanulata* has become much more common since the practice of giving raw meat has been introduced. There is, however, a simple way to avoid this danger, namely, using mutton instead of beef. The embryo in mutton can be developed into tænia in the intestines of a dog or wolf, but not of man.—*Gaz. Hebd.*, March 10, 1876. E. H. B.

Tænia and Cysticercus in the same Patient.—M. Broca reports the case of a man presenting a number of cysts of cysticerci in the muscular tissue, cellular tissue, and viscera. Four years previously the patient had suffered from *Tænia solium.* E. H. B.

DISEASES OF WOMEN.

Cyst of the Kidney mistaken for an Ovarian Cyst; Extirpation of the Kidney; Recovery.—The following case is recorded in the *Gaz. Méd.*, No. 6, 1876, from the *Giorn. Med. di Torino*, July, 1875: A widow, forty years old, entered the hospital November 15, 1873; she had had five children, the last three years before, and two abortions, one after her second child, the other after the fourth. Eighteen months ago she first noticed a tumefaction in the left iliac fossa. This tumefaction continued to increase, especially during the two months previous to admission. The patient was very feeble; her temperature normal, respiration easy; no albumen in urine. The tumor, movable in all directions, occupied the left iliac region and a portion of the hypogastric and right iliac regions; there was fluctuation at three points on the anterior surface of the tumor, uterus very high. Ovariotomy was performed December 2d. The cyst having been evacuated by puncture, was found to be attached by its posterior surface. On examination of the abdominal cavity, the two ovaries were found to be normal and in their position, and the cyst to arise from the inferior extremity of the left kidney. It was decided to remove both the cyst and the kidney. The intestinal coils adhering to the posterior wall of the cyst were detached with the fingers, the left ureter and the vessels were tied, and the kidney and cyst were extirpated entire. No hæmorrhage, properly speaking, but much oozing. Operation concluded as usual. The cyst was formed by the inferior quarter of the kidney, which was otherwise healthy. On April 7, 1874, the patient had recovered almost completely; urine was always secreted in abundance, and never contained albumen. E. F.

Congenital Absence of Urethra.—Dr. Behncke noticed in a three-days-old mature female child that there was no urethra, and that the bladder opened directly into the vagina. The child had passed no water since its birth, and the bladder was very much distended. The labia majora were normally developed, but neither the labia minora, clitoris, nor orificium urethræ was found. On exploring the vagina with a catheter it was found filled with a tenacious, gelatinous mass, after the removal of which a quantity of urine escaped. A curved sound readily passed from the most internal portion of the anterior wall of the vagina into the bladder. —*Ugesk. f. Laeger*, and *Nord. Med. Arkiv*, vol. vii., No 3. G. R. C.

Miscellany.

Appointments, Honors, etc.—Dr. Norton Folsom has resigned his position as Superintendent of the Massachusetts General Hospital. Dr. DeForest Willard has been appointed Medical Officer to the International Exhibition, in place of Dr. Herbert, transferred to the position of Secretary of the Bureau of Medical Service. Drs. Paul F. Mundé and A. A. Smith have been appointed Assistant-Surgeons in the Woman's Hospital of the State of New York.

Dr. Matthews Duncan has been unanimously reëlected, for a further term of five years, Ordinary Physician for the Diseases of Women to the Royal Infirmary, Edinburgh. Dr. E. H. Sieveking, Physician Extraordinary to the Queen, has been elected an Examiner in Medicine at the Royal College of Surgeons of England, in the vacancy occasioned by the resignation of Dr. Wilks. Dr. James Risdon Bennett has been elected President of the College of Physicians of London, in place of Sir George Burrows, retired. It is proposed to establish a Physiological Society in London. Prof. Pettenkofer has received the title of Privy Councilor from King Ludwig. Prof. Schiff, of Florence, has resigned his chair of Experimental Philosophy. M. Potain, Deputy Professor of the Faculty of Medicine at Paris, has been appointed Professor of the Theory and Practice of Medicine, in the room of M. Hardy, who has been called to another chair. Dr. Brown-Séquard has been nominated Professor of Physiology in the new Faculty of Medicine of Geneva. The Council of State made some other nominations at the same time, and appointed Dr. d'Espine, Professor of Internal Pathology; Dr. Prevost, Professor of Therapeutics; Dr. Viellet, Professor of Clinical Medicine; and Dr. Gosse, Professor of Forensic Medicine. Dr. John Brown, of Edinburgh, author of "Rab and his Friends," "Spare Hours," and other popular works, has received a pension of one hundred pounds per annum. An Imperial Sanitary Bureau is soon to be organized in Germany. Pettenkofer, Virchow, and Hirsch are expected to take an active part in its management. The Medico-Chirurgical Society of Montreal has elected Drs. R. T.

Godfrey, W. H. Hingston, George E. Fenwick, R. P. Howard, George Ross, E. H. Trenholme, and John Bell delegates to the International Medical Congress to be held in Philadelphia.

The Manhattan Eye and Ear Hospital.—We learn from the sixth annual report of this hospital that since it began its work, on the 15th of October, 1869, fourteen thousand seven hundred and eighty-three indigent persons have been treated in its dispensary and wards, and, during the same period, twenty-nine hundred and sixty-four important surgical operations have been performed upon the eye, ear, and throat. During the year ending December 31, 1875, thirty-two hundred and thirty-one patients were treated and seven hundred and four operations performed. The daily average number of persons treated at the dispensary was fifty-seven. The whole number of patients treated as hospital inmates for the year was two hundred and thirty. The number of days' board furnished to these patients was twenty-eight hundred and ninety-eight. The assets of the institution are $65,452, and the liabilities $26,734.

California State Medical Society.—The sixth annual meeting of this Society was held in San Francisco, April 19th, 20th, and 21st. Dr. Nixon, President, called the Society to order, and delivered the annual address. The following officers were elected for the ensuing year: President, Dr. Cheney, of Butte; First Vice-President, B. D. Dean, San Francisco; Second Vice-President, W. S. Hamlin, Yuba City; Third Vice-President, Dr, Pond, of Napa; Fourth Vice-President, Dr. Todd, of Stockton; Permanent Secretary, Dr. Tyrrell, of Sacramento; First Assistant Secretary, W. F. Wythe; Second Assistant Secretary, C. H. Fisher; Treasurer, Ira E. Oatman; Board of Censors, Dr. Tyrrell, Sacramento; Dr. Cushing, Oakland; Dr. Cluness, Sacramento; Dr. Plummer, San Francisco; Dr. Crook, San Francisco. The next meeting will be held in San Francisco.

German Colonies for the Insane.—The colony of Einum, opened two years ago as an offshoot of the Hanoverian asylum at Hildesheim, from which it is only half a mile distant, has proved a decided success. It now contains forty-five patients, who are employed in the open air, chiefly in farming and gardening. Not only has the result been exceedingly beneficial to the patients, but there is a large balance in the treasury. The colony of Zschadras, situated a short distance from the Saxon asylum at Colditz, has also progressed very satisfactorily. The number of colonists is about one-fourth of the entire number received at the main asylum, and their mental and bodily condition has improved beyond the most sanguine expectations of the advocates of the out-door system.

Salicylic Acid in Rheumatism.—The *Lancet* of April 8th publishes a report of the treatment, in St. Mary's Hospital, by Dr. Broadbent, of several well-marked cases of acute rheumatism with salicylic acid, after the manner recommended by Stricker. The result appears to have been eminently satisfactory, the temperature falling promptly, and the pain and other symptoms rapidly passing off. The remedy was generally given in doses of twenty grains every hour for several hours, until relief was obtained. It is certainly very desirable to have additional experience with the use of salicylic acid if it promises to limit the duration of acute rheumatism to two or three days.

Belgian Academy Prize.—The Royal Academy of Belgium offers a prize of a gold medal, worth one thousand francs, for the best essays on the two following subjects: 1. What are the relations between the emigration of blood-corpuscles and inflammation? To be illustrated by new experiments, and, if necessary, new demonstrations. 2. Indicate the relative value of amputation and excision in white swelling. Detail the indications and contraindications. The memoirs for the first question to be sent in before March 1, 1877, and for the second before July 1, 1877.

The New York Physicians' Mutual Aid Association.—From the published abstract of the seventh annual report of this Association, it appears to be in a highly-prosperous condition. Thirty-nine new members, mostly young men, have joined the Society since the last report, while there have been only five deaths during the same period. The total number of members is three hundred and seventeen. The amount of the permanent fund is $3,000, and the balance of the assessment fund in the treasury is $478. Dr. Mark Blumenthal is President, and Dr. Frank P. Foster Secretary.

Death from Chloroform during Labor.—The *Lyons Médicale* of April 9th records the death of a woman twenty-five years of age. The woman was in labor, and there being a shoulder-presentation, in order to perform version, chloroform was administered, under the sole direction of the sister in charge. The patient did not rally after the operation, and death occurred in ten minutes. The most sigular feature of the case is, that neither the *chef-de-service* nor the *interne* on duty was summoned to see the woman till she was dead.

Trouble in the Royal College of Surgeons.—Dr. Robert Barnes has, "with extreme regret, but without hesitation," resigned the position of examiner in midwifery to this college. His reason for this action is, that he does not wish to examine for the college license in midwifery "persons" possessing only fragmentary medical skill. Drs. Farre and Priestley have also tendered their resignations, and it is reported that several gentlemen have refused to fill Dr. Barnes's vacant place.

Kentucky State Medical Society.—The annual meeting of this Society was held in Hopkinsville, April 4th. The following officers were elected for the ensuing year: Dr. R. W. Gaines, of Hopkinsville, President; Drs. C. H. Todd, of Owensboro, and L. S. McMurtry, of Danville, Vice-Presidents; Dr. J. H. Letcher, of Henderson, and Dr. A. D. Price, of Harrodsburg, Secretaries. The meeting of 1877 will be held in Louisville, on the first Tuesday in April.

Journalistic Notes.—The *Medical and Surgical Reporter* has reached its thousandth issue. It was established as the organ of the New Jersey State Medical Society, and was published in Burlington, N. J. It was moved to Philadelphia, and changed into a weekly, in 1858. A new medical weekly has just been published in the German language at St. Petersburg, instead of the former bimonthly journal.

Deaths from Chloroform.—The *Lancet* of April 15th reports a death from chloroform in the Leicester Infirmary. The patient was a man fifty-three years of age, and had been carefully examined for heart-disease prior to administering the anæsthetic. Another death from chloroform occurred March 25th, in the practice of a dentist in Liverpool.

The Fork-Swallower again.—The Paris correspondent of the *Lancet* reports that Dr. Léon Labbé has successfully performed gastrotomy on the young man who about a year and a half ago swallowed a gilt fork. The operation proved a very difficult one, but it is believed the patient will make a good recovery.

Dr. Samuel B. Ward.—A large gathering of medical gentlemen, friends of Dr. Ward, gave him a complimentary dinner at Delmonico's, April 25th. The occasion was a very pleasant one, and called forth many happy speeches. Dr. Ward took his departure for Albany, May 1st, carrying with him the good wishes of a large circle of professional friends.

The Actual Cautery in Ovariotomy.—Dr. Keith, of Edinburgh, publishes a series of fifty cases of ovariotomy in which he divided the pedicle by means of the actual cautery, as practised by the late Baker Brown. Of the fifty cases thus managed only four died—one of the four being a case of malignant disease.

A Scandinavian Medical Congress.—A large meeting of Scandinavian doctors will be held in Gothenburg on the 15th of July. There is to be an exhibition also of anatomical specimens, surgical instruments, casts, scientific and medical works, designs for hospitals, etc.

The Medical Register.—The new Register will be issued during the present month. The editor, Dr. A. E. M. Purdy, has spared no labor or expense to make the forthcoming volume complete and satisfactory in every particular.

International Medical Congress.—The International Medical Congress will be formally opened at noon, on Monday, the 4th day of September, 1876, in the University of Pennsylvania. The following addresses will be delivered before the Congress in general meeting:

Address on Medicine, by Austin Flint, M. D., Professor of Practice of Medicine in Bellevue Hospital Medical College, New York.

Address on Hygiene and Preventive Medicine, by Henry I. Bowditch, M. D., President of State Board of Health of Massachusetts.

Address on Surgery, by Paul F. Eve, M. D., Professor of Operative and Clinical Surgery in the University of Nashville.

Address on Obstetrics, by Theophilus Parvin, M. D., Professor of Obstetrics in the College of Physicians and Surgeons of Indiana.

Address on Medical Chemistry and Toxicology, by Theodore G. Wormley, M. D., Professor of Chemistry in Starling Medical College, Columbus, Ohio.

Address on Medical Biography, by J. M. Toner, M. D., of Washington, D. C.

Address, by Dr. Hermann Lebert, Professor of Clinical Medicine in the University of Breslau.

Address on Medical Education and Medical Institutions, by Nathan S. Davis, M. D., Professor of Principles and Practice of Medicine in Chicago Medical College.

Address on Medical Literature, by Lunsford P. Yandell, M. D., late Professor of Physiology in the University of Louisville.

Address on Mental Hygiene, by John P. Gray, M. D., Superintendent and Physician to the New York State Lunatic Asylum, Utica, New York.

Address on Medical Jurisprudence, by Stanford E. Chaillé, M. D., Professor of Physiology and Pathological Anatomy in the University of Louisiana.

Discussions on scientific subjects will be opened in the sections as follows:

SECTION I. MEDICINE.—*1st Question.* Typho-malarial Fever: is it a Special Type of Fever? Reporter, J. J. Woodward, M. D., Assistant Surgeon U. S. Army. *2d Question.* Are Diphtheritic and Pseudo-membranous Croup Identical or Distinct Affections? Reporter, J. Lewis Smith, M. D., Physician to the New York Infants' Hospital. *3d Question.* Do the Conditions of Modern Life favor specially the Development of Nervous Diseases? Reporter, Roberts Bartholow, M. D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio. *4th Question.* The Influence of High Altitudes on the Progress of Phthisis. Reporter, Charles Denison, M. D., of Denver, Colorado.

SEC. II. BIOLOGY.—*1st Question.* Microscopy of the Blood. Reporter, Christopher Johnston, M. D., Professor of Surgery in the University of Maryland. *2d Question.* The excretory Function of the Liver. Reporter, Austin Flint, Jr., M. D., Professor of Physiology in the Bellevue Hospital Medical College, New York. *3d Question.* Pathological Histology of Cancer. Reporter, J. W. S. Arnold, M. D., Professor of Physiology in the University of the City of New York. *4th Question.* The Mechanism of Joints. Reporter, Harrison Allen, M. D., Professor of Zoölogy and Comparative Anatomy in the University of Pennsylvania.

SEC. III. SURGERY.—*1st Question.* Antiseptic Surgery. Reporter, John T. Hodgen, M. D., Professor of Surgical Anatomy and of Clinical Surgery in the St. Louis Medical College. *2d Question.* Medical and Surgical Treatment of Aneurism. Reporter, William H. Van Buren, M. D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Bellevue Hospital Medical College, New York. *3d Question.* Treatment of Coxalgia. Reporter, Lewis A. Sayre, M. D., Professor of Orthopedic Surgery and of Clinical Surgery in the Bellevue Hospital Medical College, New York. *4th Question.* The Causes and Geographical Distribution of Calculous Diseases. Reporter, Claudius H. Mastin, M. D., of Mobile, Alabama.

SEC. IV. DERMATOLOGY AND SYPHILOLOGY.—*1st Question.* Variations in Type and in Prevalence of Diseases of the Skin in Different Countries of Equal Civilization. Reporter, James C. White, M. D., Professor of Dermatology in Harvard University. *2d Question.* Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders? Reporter, Lucius Duncan Bulkley, M. D., of New York. *3d Question.* The Virus of Venereal Sores; its Unity or Duality. Reporter, Freeman J. Bumstead, M. D., late Professor of Venereal Diseases at College of Physicians and Surgeons, New York. *4th Question.* The Treatment of Syphilis with Special Reference to the Constitutional Remedies appropriate to its Various Stages; the Duration of their Use, and the Question of their Continuous or Intermittent Employment. Reporter, E. L. Keyes, M. D., Adjunct Professor of Surgery and Professor of Dermatology in Bellevue Hospital Medical College, New York.

SEC. V. OBSTETRICS.—*1st Question.* The Causes and the Treatment of Non-puerperal Hæmorrhages of the Womb. Reporter,. William H. Byford, M. D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College. *2d Question.* The Mechanism of Natural and of Artificial Labor in Narrow Pelves. Reporter, William Goodell, M. D., Clinical Professor of Diseases of Women and of Children in the University of Pennsylvania. *3d Question.* The Treatment of Fibroid Tumors of the Uterus. Reporter, Washington L. Atlee, M. D., of Philadelphia. *4th Question.* The Nature, Causes, and Prevention, of Puerperal Fever. Reporter, William T. Lusk, M. D., Professor of Obstetrics and Diseases of Women and Children in Bellevue Hospital Medical College, New York.

SEC. VI. OPHTHALMOLOGY.—*1st Question.* The Comparative Value of Caustics and Astringents in the Treatment of Diseases of the Conjunctiva, and the Best Mode of applying them. Reporter, Henry W. Williams, M. D., Professor of Ophthalmology in Harvard University. *2d Question.* Tumors of the Optic Nerve. Reporter, Hermann Knapp, M. D., of New York. *3d Question.* Orbital Aneurismal Disease and Pulsating Exophthalmia; their Diagnosis and Treatment. Reporter, E. Williams, M. D., Professor of Ophthalmology in Miami Medical College of Cincinnati. *4th Question.* Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition, or can they be induced by Defects of Refraction, acting through the Influence of the Ciliary Muscle? Reporter, E. G. Loring, M. D., of New York.

SEC. VII. OTOLOGY.—*1st Question.* Importance of Treatment of Aural Diseases in their Early Stages, especially when arising from the Exanthemata. Reporter, Albert H. Buck, M. D., of New York. *2d Question.* What is the Best Mode of Uniform Measurement of Hearing? Reporter, Clarence J. Blake, M. D., Instructor in Otology in Harvard University. *3d Question.* In what Percentage of Cases do Artificial Drum-membranes prove of Practical Advantage? Reporter, H. N. Spencer, M. D., of St. Louis.

SEC. VIII. SANITARY SCIENCE.—*1st Question.* Disposal and Utilization of Sewage and Refuse. Reporter, John H. Rauch, M. D., late Sanitary Superintendent of Chicago, Illinois. *2d Question.* Hospital Construction and Ventilation. Reporter, Stephen Smith, M. D., Professor of Orthopedic Surgery in the University of the City of New York. *3d Question.* The General Subject of Quarantine with Particular Reference to Cholera and Yellow Fever. Reporter, J. M. Woodworth, M. D., Supervising Surgeon-General U. S. Marine Hospital Service. *4th Question.* The Present Condition of the Evidence concerning "Disease-Germs." Reporter, Thomas E. Satterthwaite, M. D., of New York.

SEC. IX. MENTAL DISEASES.—*1st Question.* The Microscopical Study of the Brain. Reporter, Walter H. Kempster, M. D., Physician and Superintendent of Northern Hospital for Insane, Oshkosh, Wisconsin. *2d Question.* Responsibility of the Insane for Criminal Acts. Reporter, Isaac Ray, M. D., of Philadelphia. *3d Question.* Simulation of Insanity by the Insane. Reporter, C. H. Hughes, M. D., of St. Louis, Mo. *4th Question.* The Best Provision for the Chronic Insane. Reporter, C. H. Nichols, M. D., Physician and Superintendent of the Government Hospital for the Insane, Washington, D. C.

Gentlemen intending to make communications upon scientific subjects, or to participate in any of the debates, will please notify the Commission before the 1st of August, in order that places may be assigned them on the programme.

In order to facilitate debate, there will be published on or about June 1st the outlines of the opening remarks by the several reporters. Copies may be obtained on application to the Corresponding Secretaries.

The volume of Transactions will be published as soon as practicable after the adjournment of the Congress.

The public dinner of the Congress will be given on Thursday, September 7th, at 6.30 P. M.

The registration-book will be open daily from Thursday, August 31st, from 12 to 3 P. M., in the Hall of the College of Physicians, northeast corner of Thirteenth and Locust Streets. Credentials must in every case be presented.

The registration fee (which will not be required from foreign members) has been fixed at Ten Dollars, and will entitle the member to a copy of the Transactions of the Congress.

Gentlemen attending the Congress can have their correspondence directed to the care of the College of Physicians of Philadelphia, northeast corner of Locust and Thirteenth Streets, Philadelphia, Pennsylvania.

All communications must be addressed to the appropriate Secretaries at Philadelphia.

The foregoing programme is published by the authority of the Committee of Arrangements of the Centennial Medical Commission.

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Foreign Corresponding Secretaries.

Lithotomy and Lithotrity in London.—In a paper read at the Medical Society of London on March 13th, Mr. Walter Coulson gave a statistical review of the results of these two operations in the London hospitals. The following were some among the principal conclusions at which Mr. Coulson arrived from the statistics furnished in his tables: Considering the general results of the two operations massed together, the author found that the number of cases of vesical calculus treated by operation in the four great hospitals during five consecutive years was one hundred and forty-eight, while the number of deaths was twenty-four. The general mortality was, therefore, one in six and one-sixth. At St. Peter's Hospital during the same period the number of operations was sixty-seven and the deaths six, the general mortality being one in eleven and one-sixth, or nearly one-half. This remarkable difference the author attributed to the kind of operation selected. In the great hospitals lithotomy is the operation chiefly performed, while at St. Peter's the most frequent operation is lithotrity. This is a general view only. The question of age must be considered if we institute a comparison of frequency between the two operations. In some reports ages are given, in others not; but, allowing a proportion of one-third for persons under sixteen years of age, the tables show that in the great hospitals the proportion of adults cut to adults crushed is as eighty-two to twenty-nine. Hence lithotrity is applied to one-third of the total number of cases only. At St. Peter's, where the ages are recorded, the author finds that lithotrity is applied to three-quarters of the cases operated on. M. Civiale had long ago made the same remark, showing that the great hospital-surgeons of Paris applied lithotrity to one-third of their cases only, while he applied it to three-fourths. Several returns from large provincial hospitals seem to show a similar preference of lithotomy. The preference, however, is more clearly shown in one of the tables, from which it follows that the total number of operations of lithotrity in the four great hospitals during a period of five successive years was twenty-nine; while at St. Peter's, during the same period, the number was forty-four—considerably greater than all the four put together: results, however, he said, form the most important point to consider. In the great hospitals the death-rates of lithotrity and of adult lithotomy are nearly equal, being as six to seven. At St. Peter's lithotrity is twice as successful as lithotomy. Again, the author pointed out that the reports of the four great hospitals show, for lithotrity, twenty-eight cases with five deaths, while at St. Peter's the cases were forty-three and deaths three. Finally, the author brought to light a remarkable coincidence between the results of lithotrity as applied in the three special departments of Paris, University College, and St. Peter's. In the special department of University College Hospital the mortality of lithotrity is one in sixteen. At the Necker Hospital the mortality is one in 15.6 (for twelve years). At St. Peter's (for five years) the mortality is one in 14.3. The author concluded that the difference of results often exhibited by the tables pointed toward a neglect of lithotrity in the great hospitals, and, he added, to the necessity of rendering the treatment of vesical calculus by the operation of lithotrity a special department of surgery. The latter conclusion is not, to our mind, an obvious one.—*British Medical Journal.*

Prof. Virchow.—In an interesting letter from Berlin, published in the *Boston Medical and Surgical Journal* of February 17th, the writer says of Virchow:

All in all, he is one of the most remarkable men I ever knew. His *personnel* is by no means striking. He is below the average German stature, of a dingy complexion, and with an impassioned expression; one fails to detect the depth of his researches in science, or the strong will or the cutting sarcasm which characterizes him. An hour in the Pathologisches Institut easily demonstrates his accurate study in that part of medical science to which he has devoted the most hours of the best part of his eventful life. His political tenets, at variance with those of the chancellor of the empire, and in sympathy with that large radical party of Germany whose ideal may be seen in nearly every European government of to-day, call it by whatever name you please, liberalism, radicalism, or conservatism, have developed an iron will and a bitter sarcasm which make him a species of terror to the Government. In other ways he is remarkable. Always late at his lecture, and appearing now but twice a week, he has time enough, apparently, for the numerous demands made upon him. On the same day he is to be seen from 9 to 11 A. M. in the Pathologisches Institut, demonstrating, with a vast array of material, cellular pathology; and from 5 to 7 or 8 P. M. in the Chamber of Deputies of Prussia, of which this week he was elected vice-president, over the nomination of his predecessor; later, hard at work in the Royal Geographical Society. Besides these official appointments he is chief editor of a popular journal of science, contributes occasionally an article to scientific bodies, and gives popular lectures in the winter. I have alluded to his life as an eventful one. It may not be generally known on our side of the water that, in the Revolution of 1848, he fought as a common soldier behind the trenches; that he was forced to abandon his professorship here on account of his political doctrines, and that he went to Würzburg, where the book of his life—the exposition of the cellular pathology—was written; that the Government was obliged to recall him to his department in the university on account of the urgent demand of scientific men, who recognized his worth by the new book; that later Prince Bismarck challenged him to a duel, whose acceptance he had the courage to refuse; these and many other events of his life make Rudolph Virchow one of the most conspicuous men of the day in Germany. I am told that he regrets the comment not long ago made about him, that he was a severe critic as to the merits of other men. Virchow is poor, lives on the second flight, and complains that he cannot live as a gentleman of his standing should. A sketch of his life, by Herbert Tuttle, of Berlin, formerly of Boston, will shortly appear in the Routledge series, under the title of "German Political Leaders."

The California Medical Law.—A bill regulating the practice of medicine has been passed by the California State Legislature, and signed by the Governor. The following are its leading features, as given by the *Western Lancet:*

Every person practising medicine, surgery, or any specialty connected with either medicine or surgery, is required to present to a Board of Examiners his diploma or license, with satisfactory evidence of its genuineness.

Each State medical society, the date of whose organization is prior to the month of March, 1876, and whose members are required to possess diplomas or licenses from regularly chartered schools, shall elect from its members seven physicians, who shall constitute a Board of Examiners.

The Board of Examiners shall inspect the diploma or license of every physician in the State. Upon the presentation of sufficient evidence of the genuineness of such diploma or license the physician receives from the board a certificate, which entitles him to practise throughout the State. The board also examines persons not having diplomas or licenses; and to those who give evidence of a satisfactory knowledge of medicine and its branches a certificate is issued which entitles the holder to practise throughout the State.

The board has the power of ignoring the diploma or license of any physician who has in the past associated with charlatans, and who has habitually violated the code of ethics. It also has the power of revoking any certificate which may have been granted by the board, upon proof of a violation of the code.

Members of the medical staff of the Army and Navy, and students prescribing under preceptors, are exempt from the provisions of the bill.

The Treatment of Tapeworm.—A return of the quantity of the several drugs in most general use for the treatment of tapeworm in the public hospitals of Paris during the last ten years has been made by the Director of the Central Pharmacy. A comparison of the relative quantities consumed during the first and second halves of the decennium supplies an interesting indication of the professional verdict as to their relative value. The average quantity of kousso consumed annually was more than twice as great during the four years since 1870 as during the six years before. The amount of pumpkin-seeds employed has not quite doubled; that of pomegranate-bark has remained almost stationary; and that of the male-fern has more than doubled. Kousso and male-fern thus appear to be the remedies on which Parisian experience shows most reliance can be placed. M. Colin, however, in a recent paper on "Tænia in the French Army," advocates very strongly the use of pomegranate-bark. He asserts that when the precaution was taken never to administer a purgative before the vermifuge, the head of the worm was expelled, in three cases out of four, by a single dose. A purgative given before simply tears away the segments, leaving the head attached, and the head is then undisturbed by the special medicine.—*Lancet.*

The Albany Medical College, Reorganization of the Faculty.—The following gentlemen have been appointed to the professorships named in the above institution:

S. Oakley Vanderpoel, M. D., Professor of Theory and

Practice and Clinical Medicine; John V. Lansing, M. D., Professor of Materia Medica and Clinical Medicine; John Swinburne, M. D., Clinical Surgery; Albert Van Derveer, M. D., Surgery; John V. P. Quackenbush, M. D., Obstetrics; Samuel B. Ward, M. D., Surgery; Jacob S. Mosher, M. D., Hygiene and Medical Jurisprudence; Lewis Balch, M. D., Anatomy; Maurice Perkins, M. D., Chemistry; John P. Gray, M. D., of Utica, Mental Diseases; Edward B. Hun, M. D., Nervous Diseases; William Hailes, M. D., Anatomy, Histology, and Pathological Anatomy; George T. Stevens, M. D., Diseases of the Ear; J. P. Boyd, Jr., M. D., Diseases of Women and Children; Cyrus Merrill, M. D., Diseases of the Eye; Willis G. Tucker, M. D., Chemistry; Henry March, M. D., Curator, etc.

Deaths from Snake-bite in India.—Dr. Richards, of the Indian Medical Department, has published an interesting report on snake-poisoning. It appears that, during the year 1873–'74, the number of cases of snake-bite reported in the Lower Provinces and Assam was 4,202; of these, no fewer than 3,565 were fatal. Nearly one-half of the cases occurred during sleep. Natives of the lower classes generally sleep upon the ground, and snakes entering the houses often crawl over the sleeper. If he lie quiet, the snake will seldom bite; but, if, feeling something cold gliding over a limb, he move it instinctively, the snake turns at once and bites. It is remarkable that the proportion of women bitten was greater than that of men. In Bengal proper, the majority of the deaths are credited to the cobra, while in Behar the krait seems to be most common and most fatal. The daboia, too, does much mischief.—*British Medical Journal.*

The Transplantation and Implantation of Hairs.—An interesting paper on this subject appears in the *Zeitschrift für Biologie* (Band xi., Heft 3). from the pen of Dr. Ernst Schweninger, of Munich. He gives the following as the results of his numerous experiments: First, that hairs that have been recently extracted, and to the root of which cell-layers of the root-sheath still remain adherent, if brought into contact with freshly-granulating surface, are capable of contracting adhesions with this, and that from this point a process of skinning over may commence, as after cutaneous transplantation. He has further shown that such hair root-sheaths can attach themselves to the iris and continue to grow. The iris, therefore, constitutes an excellent place for conducting experimental researches of this nature.—*Lancet.*

Syphilis communicated by Venesection.—The *Medizinisch-Chirurgisches Centralblatt* states that some cases of communication of syphilis by venesection have occurred in the military frontier district of Austria. In August and September last, a barber bled two pneumonic patients, by the order of a medical man and another person without medical instruction. Syphilis appeared in the cutaneous form. Two of the individuals were shown at a meeting of the Medical Society in Essek, and the diagnosis was confirmed by the fourteen members present. Local signs of syphilis also appeared in all the three cases at the spot where the bleeding was made; and the most careful inquiry could detect no other source of infection. The barber was sentenced to imprisonment for fourteen days, and a fine.

Long Life in England.—In the year 1873, for which the returns have recently been published, the lists of deaths included 196 men and 480 women who were registered as ninety-five years of age or upward when they died. Of these, eighty-nine had attained one hundred years or more, and it is remarkable that no less than seventy-nine of this number were females. The oldest of the men in the obituary of the year died in the Wolstanton district, Staffordshire, aged one hundred and three, but a woman who died in Hurst Almshouse, Exeter, was one hundred and eight, and another at Newport, in Monmouthshire, had reached the great age of one hundred and twelve. Of these eighty-nine centenarians, nine were found in London, thirteen in North and South Wales, six in Yorkshire, and six in Norfolk.—*Lancet.*

The Marriage of Near Kin.—An interesting fact in connection with this debated question was brought out in the speech made by Sir Edmund Beckett, in his capacity as chairman of the annual festival of the West-End Branch of the Royal Association in Aid of the Deaf and Dumb. He stated that one of the cases requiring assistance from the society was that of a gardener, who had eight children born deaf and dumb. These eight deaf-mutes were the children of cousins; and Sir Edmund Beckett went on to remark on the common occurrence of several deaf and dumb children in one family, and especially in families where the parents, though not deaf and dumb themselves, were cousins.—*British Medical Journal.*

Experiments with Vaccine Virus.—M. Chauveau's well-known experiments on the vaccine virus are called in question by M. Bert. He does not admit the validity of the experiments by washing and filtering, with which Chauveau arrived at his conclusions, but has subjected vaccine matter to a pressure of thirteen atmospheres of oxygen; the virus not having lost any of its properties, he thinks it evident that it does not owe them to an animal substance. The virus of vaccine must, he holds, be ranged, therefore, in the class of diastases or false ferments.—*British Medical Journal.*

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department of the United States Army, from April 14 *to May* 13, 1876.

EDWARDS, L. A., Surgeon.—Leave of absence extended six months on surgeon's certificate of disability. S. O. 84, A. G. O., April 28, 1876.

BAILY, E. J., Surgeon and Medical Director.—Granted leave of absence for thirty days, with permission to leave limits of department. S. O. 38, Department of the Columbia, April 3, 1876; and leave extended one month. S. O. 45, Military Division of the Pacific, April 12, 1876.

MAGRUDER, D. L., Surgeon and Medical Director.—Granted leave of absence for one month. S. O. 49, Department of Arizona, April 17, 1876.

ALEXANDER, R., Surgeon.—In addition to his present duties as Post Surgeon, Fort Vancouver, assigned to duty as acting medical director and attending surgeon at these headquarters. S. O. 43, Department of the Columbia, April 8, 1876.

WEBSTER, W., Surgeon.—At expiration of his sick-leave, assigned to duty as Post Surgeon at Fort Warren, Mass. S. O. 85, Military Division of the Atlantic, May 9, 1876.

STERNBERG, GEORGE M., Surgeon.—To report to the commanding general, Department of the Columbia, for assignment to duty. S. O. 92, A. G. O., May 11, 1876.

KNICKERBOCKER, B., Assistant Surgeon.—Ordered before Army Medical Board, New York City, for examination for promotion, and upon its completion to report by letter to the Surgeon General. S. O. 88, A. G. O., May 5, 1876.

Woodhull, A. A., Assistant Surgeon.—Granted leave of absence for two months, with permission to apply for an extension of one month. S. O. 12, Department of the South, May 2, 1876.

Happersett, J. C. G., Assistant Surgeon.—Granted leave of absence for three months. S. O. 90, A. G. O., May 8, 1876.

Williams, J. W., Assistant Surgeon.—Assigned to duty as chief medical officer of the expedition now being organized at Fort Abraham Lincoln, D. T. S. O. 63, Department of Dakota, May 8, 1876.

Brewer, J. W., Assistant Surgeon.—To accompany recruits from New York City to Department of the Platte, and upon arrival there to report to the department commander for assignment to duty. S. O. 90, C. S., A. G. O.

Lippincott, H., Assistant Surgeon.—In addition to his other duties, to assume charge of the medical director's office during absence of Surgeon Magruder. S. O. 49, C. S., Department of Arizona.

Meacham, F., Assistant Surgeon.—Assigned to duty at Fort Brown, Texas. S. O. 77, Department of Texas, May 2, 1876.

Kimball, J. P., Assistant Surgeon.—Assigned to duty as Post Surgeon at Fort Brady, Mich. S. O. 83, Military Division of the Atlantic, May 6, 1876.

Campbell, A. B., Assistant Surgeon.—Granted leave of absence, on surgeon's certificate of disability, for one month. S. O. 62, Department of Texas, April 6, 1876.

Matthews, W., Assistant Surgeon.—Assigned to duty at Camp Independence, Cal. S. O. 40, Department of California, April 20, 1876.

King, W. H., Assistant Surgeon.—Granted leave of absence for one month on surgeon's certificate of disability, with permission to leave Department of the South. S. O. 79, A. G. O., April 20, 1876.

Crampton, L. W., Assistant Surgeon.—Assigned to duty at Vicksburg, Miss. S. O. 77, Department of the Gulf, April 20, 1876.

Taylor, M. E., Assistant Surgeon.—Assigned to duty at Baton Rouge, La. S. O. 84, Department of the Gulf, May 1, 1876.

Shannon, W. C., Assistant Surgeon.—Assigned to temporary duty at Fort Clark, Texas. S. O. 78, Department of Texas, May 3, 1876.

Peters, D. C., Surgeon (retired).—Died in Brooklyn, N. Y., April 22, 1876.

Obituary.

Mr. Michael Donovan, formerly well known as a chemist, and the inventor of "Donovan's solution," died recently, at an advanced age. He was the author of a "Treatise on Chemistry," and a work entitled "Domestic Economy."

Mr. Campbell de Morgan died, at his residence in London, April 12th, of acute pneumonia.

Dr. Vleminckx, President of the Belgian Academy of Medicine, died lately, at the age of seventy-six. He had been President of the International Medical Congress, which met in Brussels last year. During thirty-four years, he had been inspector-general of the medical service of the army, in which he had introduced many improvements.

Dr. Dewitt C. Peters, late surgeon U. S. Army, died in Brooklyn, N. Y., of consumption, April 22, aged forty-seven years.

Dr. Moritz Körner, of Grätz, died April 12th, after a short illness, in the fifty-sixth year of his age. He was Professor of Special Pathology and Therapy, and was regarded as one of the most gifted men and earnest workers in the university.

Prof. Merkel, of Leipsic, long known as an instructor in laryngology, died recently, at an advanced age.

Dr. Adolph Biornborg, an adjutant on the staff of Prince Murat during the wars of the First Napoleon, and commander of a cavalry squadron in the French Army in 1812, died in Lawrence, Mass., April 21st.

M. **Jerome Balard**, the famous chemist, and the discoverer of bromine, died lately, aged seventy-three. He was Professor of Chemistry at the Collége de France, a member of the Institute, and a Knight Commander of the Legion of Honor, and had attained the highest scientific post of his country.

Prof. Traube, of Berlin, who died April 11th, was born in 1818, in Silesia, and studied medicine at the Universities of Breslau and Berlin. After taking his degree he went to Prague, Vienna, and Paris, where he studied specially methods of physical examination of the chest. Returning to Berlin, he soon became an eminent specialist for heart and lung diseases. As a member of the Mosaic confession, it was not till after the Revolution of 1848 that he was admitted to the Charité Hospital as clinical assistant to the celebrated Schönlein. He was the first civilian resident physician in the Charité, the other places being filled, as the majority of them are at present, by doctors of the army. In 1853 Traube became a clinical teacher, and acquired as such a high reputation. Virchow, who was associated with him by the similarity of their aims and studies, no less than by personal friend ship, has written his necrology in feeling expressions in the last number of the *Klin. Wochenschrift.* The medical faculty of the Berlin University has lost during the last twelve years the following ten members: Casper, Remak, Griesinger, Graefe, Mitscherlich, Romberg, Schulz-Schulzenstein, Tuengren, Martin, Traube.—*Lancet.*

Sir William Robert Wilde, Surgeon-Oculist in Ordinary to her Majesty in Ireland, died in Dublin, April 26th. Dr. Wilde established the first hospital for ophthalmic disease in Ireland, about forty years ago, at his own expense. He has since 1841 been a census commissioner. He was the author of numerous pamphlets on medical, statistical, and other subjects, and his work on "Aural Surgery" has been translated into several languages. He was knighted in 1848.